JUL 26 1933

HYGEIA

The HEALTH MAGAZINE

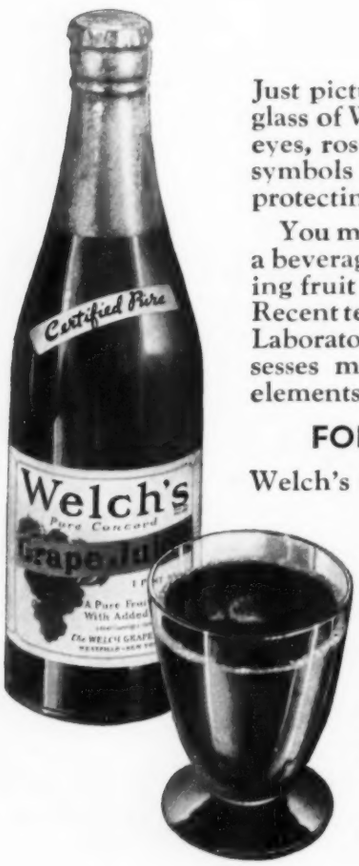
PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

August, 1933 25 Cents

Dog Laws - The Cross-Eyed Child - Diabetes

Be Sure It's **Welch's** Certified Pure—Pasteurized **GRAPE JUICE**

It Supplies Many Dietetic Values



Just picture your child back of this glass of Welch's Grape Juice. Bright eyes, rosy cheeks, radiant smile . . . symbols of health . . . the result of protecting care.

You may think of Welch's only as a beverage, as a delightful and pleasing fruit drink. It is more than that. Recent tests in an Eastern University Laboratory reveal that Welch's possesses many valuable nutritional elements.

FOR QUICK ENERGY

Welch's Grape Juice contains simple grape sugars which are speedily absorbed and require no digestion.

Welch's Grape Juice is nature's own energy builder. A glowing purple liquid food, containing essentially the same nutritional value as ripe Concord grapes fresh from the vine . . . sugars, vitamin B content, iron, potassium, and energy elements (286 calories to the pint). For children and adults, Welch's offers an abundance of body-energizing properties combined with a delicious taste. It contains Vitamin B (B_1). Its minerals have, as an end effect, an alkaline reaction on the body. It provides good quantities of iron. Thus, Welch's is valuable as a hemoglobin or blood restorative.

Why Welch's
AND NOT CHEAPER JUICES?

It is the Welch process that retains in the bottled juice the valuable nutritional properties of ripe Concord grapes so essential to the system. Welch's is the Certified Pure, Pasteurized Grape Juice. It's aged three months to permit the natural but crude tartaric acid crystals to settle out of the juice. It contains no adulterants, no synthetic flavors, no artificial coloring, no preservatives, no added water. And it's inexpensive . . . the cheapest in 35 years. Welch's is undiluted grape juice, so many prefer to add one-third water to the pint. Mixed this way, Welch's costs less than 3½c a glass.

CERTIFIED PURE

By noted scientist through Tests made in Eastern University Laboratory

THE WELCH GRAPE JUICE CO., Westfield, N. Y.

HYGEIA, the Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Volume 11, Number 8. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923.

HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association • • • Edited by Morris Fishbein, M.D.

Volume 11 AUGUST, 1933 Number 8

TABLE OF CONTENTS

COVER DESIGN
Mildred H. Holmes PAGE

THE FACTS ABOUT PROPRIETARY FOODS 682

FORTY—LOOKING FORWARD 684
John R. Hamilton

DOG LAWS 686
Richard E. Stifel

IN THE SHADOW OF THE NEEDLE 688
Robert D. Reynolds

THE CROSS-EYED CHILD 692
Leo L. Mayer

VITAMIN D MILK 694
James A. Tobey

THINKING OF STUDYING MEDICINE 697
Henry Pleasants, Jr.

"EGG FREE" 701
Gertrude T. Spitz

BRIEF HEALTHGRAMS 703

THE EFFECT OF TEETH ON FACIAL EXPRESSION 704
Robert H. Brotman

EXHIBITS OF THE AMERICAN MEDICAL ASSOCIATION .. 706

PREVENTIVE PSYCHIATRY 708
Frederick L. Patry

FORECAST FOR SEPTEMBER 710

TRAINING FOR ATHLETICS AND HEALTH. CHAPTER VIII 711
Alfred E. Parker

"CAST" CLOTHES 715
Marguerite S. Hopkins

SAFEGUARDING THE TAKE-OFF FOR SCHOOL 716
Gaylord W. Graves

BETWEEN PRINCES AND PAUPERS 718
Sophia Yarnall

SEX EDUCATION. II. REPRODUCTION IN THE PLANT AND ANIMAL KINGDOMS 722
Thurman B. Rice

EATING UNDER THE SKY 727
Mary C. Brown

PRODUCTION OF THE HUMAN VOICE 731
Leon Felderman

PROGRESS IN PREVENTIVE MEDICINE. PART VI 735
P. M. Ashburn

HEALTH PURSUITS IN PICTURES 739; 748

THE RED WAGON WHEEL 740
Ethel J. Eldridge

SCHOOL AND HEALTH 742

NEW BOOKS ON HEALTH 747

QUESTIONS AND ANSWERS 749

CONTRIBUTORS TO THIS ISSUE

● DR. JOHN R. HAMILTON, Nassawadox, Va., describes the outlook and tells how to plan for a full, useful and pleasant life at "Forty—Looking Forward." . . . DR. RICHARD E. STIFEL, Cleveland, makes a strong plea for the establishment and observation of stringent "Dog Laws." . . . ROBERT D. REYNOLDS, a diabetic patient, looks at life "In the Shadow of the Needle" and finds it not bad.

● DR. LEO L. MAYER, Chicago, brings the encouraging message that "in this day and age there is no reason for any one to have crossed eyes." . . . JAMES A. TOBEY, DR.P.H., New York City, who discusses the benefits of vitamin D milk, is the author of several books on milk. . . . In "Thinking of Studying Medicine," DR. HENRY PLEASANTS, JR., West Chester, Pa., gives a father-and-son talk, setting forth impartially the seamy and the bright side of the profession.

● DR. FREDERICK L. PATRY, neuropsychiatrist, state education department, University of the State of New York, explains the principles and methodology of "Preventive Psychiatry" and tells how to live wisely and well. . . . GERTRUDE T. SPITZ, chief of the food clinic, Beth Israel Hospital, Boston, gives recipes and menus for the "egg free" diet. . . . ROBERT H. BROTMAN, D.D.S., Baltimore, will be remembered by HYGEIA readers for his recent articles on pyorrhea and halitosis.

● DR. GAYLORD W. GRAVES, who contributes a radio talk which he delivered under the auspices of the New York Tuberculosis and Health Association, is clinical professor of pediatrics, New York University and Bellevue Hospital Medical College. . . . ALFRED E. PARKER, director of physical education, Berkeley (Calif.) High School, continues his series on "Training for Athletics and Health," telling what constitutes good posture and how it may be attained. . . . MARGUERITE S. HOPKINS, instructor in costume design, Iowa State College, has turned her own experience to good account; finding it necessary to wear a cast, she has designed graceful clothes to hide its disfiguring lines.

● Continuing his series on "Sex Education," DR. THURMAN B. RICE, associate professor of bacteriology and public health, Indiana University School of Medicine, discusses reproduction in the plant and animal kingdoms. . . . MARY C. BROWN tells how to plan, prepare and serve refreshing, healthful outdoor meals. . . . DR. LEON FELDERMAN, Philadelphia, who writes on "Production of the Human Voice," is the author of the book entitled "The Human Voice; Its Care and Development." . . . DR. P. M. ASHBURN, Colonel, U. S. Army, retired, continues his discussion of "Progress in Preventive Medicine."

● For the youngest readers, ETHEL J. ELDRIDGE tells the story of "The Red Wagon Wheel."

Published monthly by the American Medical Association, 535 North Dearborn Street, Chicago. Subscription price $2.50 a year. Single copies 25 cents. Foreign subscriptions $3.25 a year.

Copyright, 1933, by the American Medical Association. All rights reserved.

The Facts About

Bas-Relief from the American Medical Association Exhibit, A Century of Progress

THE Committee on Foods of the American Medical Association was formed in response to the gradual attempt by the manufacturers of proprietary food substances to have proprietary foods take the place of the old-fashioned tonic of the proprietary medicine industry. More actual knowledge has been acquired concerning diet in the past twenty-five years than in all the previous centuries of the life of man. The coming of actual information concerning proteins, carbohydrates and fats, caloric values, mineral salts and the vitamins was a stimulus to exploitation in advertising. Moreover, the evolution of advertising had been such that propagandists found it necessary to shout louder and louder and to make more and more extravagant claims in order to attract public attention. Finally, the attention of the people has turned increasingly to health during the past twenty-five years, so that the health angle has become the approach of most value in the sale of any type of goods.

IT WAS because of this that the Committee on Foods of the American Medical Association was established. Its purpose was primarily to make certain that foods advertised in the columns of *The Journal of the American Medical Association* and of HYGEIA, the Health Magazine, and of other periodicals published by the American Medical Association would be honestly advertised from the point of view of health so that the claims made for them would be in accordance with well established composition and the processes of manufacture. The Food and Drugs Act properly controls the label on the products and the claims made on the package but does not in any way control claims that may be made in advertising.

Every one who has investigated the subject now realizes that heat may destroy valuable elements in food substances, that oxygenation and acidification may also bring about extraordinary changes. Moreover, the establishing of definite effects in association with the intake of certain substances, such as iron, iodine, other mineral salts and vitamins, makes it desirable for the public to have some understanding of what is being put into the body. Finally, there are well established cases of sensitivity to protein substances, so serious in the reaction that the consumer who has a sensitivity is entitled to know whether or not the food products he

Proprietary Foods

purchases actually contain some of the substances to which he reacts.

AFTER it was established, the Committee on Foods began to make its investigations of food products. Today more than a thousand products have been considered by the committee, and almost 500 have been accepted. Many others are in process of revision of labels, advertising claims and even method of manufacture, in order to make it possible to meet the committee's requirements.

The committee has developed a series of decisions governing ideal labels, vitamin claims, the use of the names of diseases, chocolate drinks for infants, and similar subjects, which enable manufacturers to know how far they may go in discussing such cases in their advertising.

The manufacturer who complies with the committee's requirements is entitled to use the seal of the committee on his packages and in his advertising, with the understanding, however, that no other seal is to appear concurrently with the seal of the American Medical Association. The development of seals of approval and their use in advertising is being exploited by many manufacturers of various types of products.

NO manufacturer can contribute funds in any way for the examination of his products. The work of the committee is a philanthropic and scientific endeavor of the American Medical Association and is paid for by the income from *The Journal*. In the near future the committee proposes to publish a book called "Accepted Foods," in which will be discussed the various claims from the point of view of health which may be made for food products of various types. It proposes also to list the foods that are accepted, with a statement of their composition, process of manufacture and acceptable claims, and also to list the unaccepted foods, with statements of the reasons for their rejection. By the use of this book and the gradual education of the public in this field, it is hoped to bring about a rationalization in food advertising. The proposal in Congress of amendments to the Food and Drugs Act, many of them incorporating items set forth by the Committee on Foods, is a recognition of the necessity for work of this character.

Bas-Relief from the American Medical Association Exhibit, A Century of Progress

Forty—Looking Forward

By JOHN R. HAMILTON

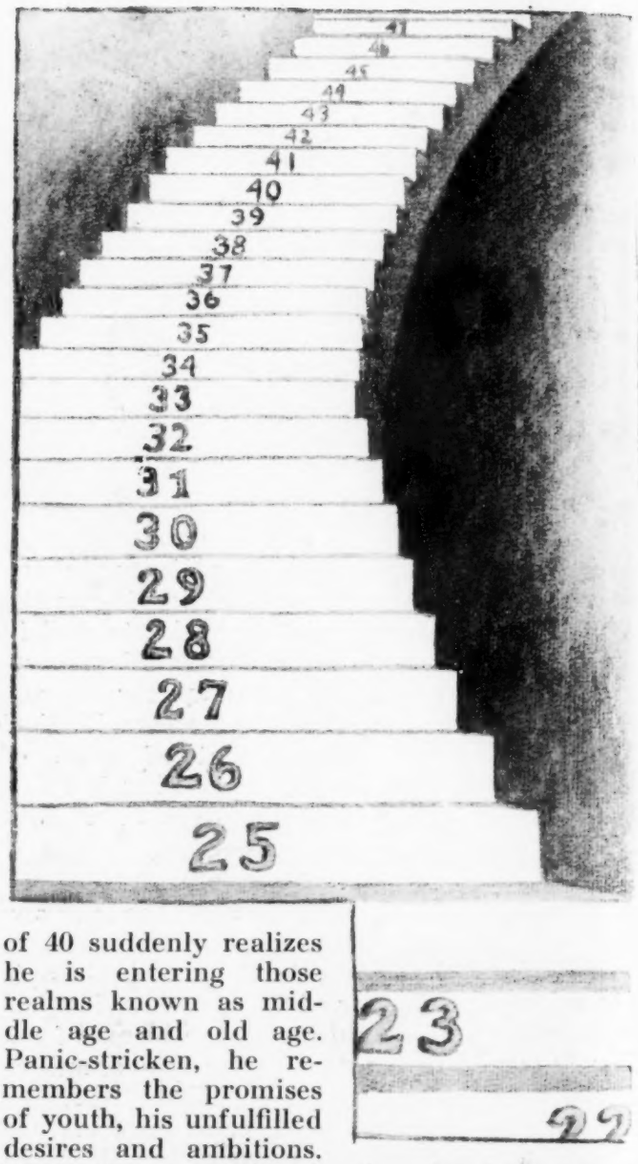
THROUGHOUT childhood and youth, early manhood is glorified to the boy as the goal for his physical and mental development. He is entreated to eat spinach or carrots so that he will grow up strong and active. He is urged to make good marks at school so that he will be better prepared to take his place in the competitive world of business. The achievements of Franklin, Washington, Lindbergh and others while they were young men are told to the boy to urge him on to this magnificent age.

The mother spends hours reading and planning that her boy may arrive at this period with a well developed physique and an alert mind. The father watches his own life so that he may be a model for his growing son. He spends hours with him, hoping through companionship and conversations to guide his boy safely through the hazards that precede the entrance into early manhood. The state, in order to prepare the boy for his place as one of its citizens, has provided schools and has fostered plans to guard his health. Religious institutions take the same special interest in helping his spiritual development. Medicine with its special branches of obstetrics, pediatrics, prenatal and postnatal care, preventive medicine and child psychology has added to life itself and to the usefulness of life.

All these activities come to a close when the boy reaches the early twenties. No estimate can be made of the great value of this work. No praise of it can be too lavish. But from that time forward, when man is actively engaged in the tasks for which he was so well prepared, he himself is the only agency still left to provide for and safeguard the continuation of his mental and physical development.

To consider a man's development finished when he has reached the early twenties is to stop far short of the real span of usefulness and achievement. It is like the procedure of the farmer who chooses his land with all foresight and care, cultivates it with attention, buys the best fertilizers and seed potatoes available, plants them in accordance with the best advice from reliable sources, and then, with a sigh of relief, sits back and counts his labor at an end and his fortune assured. He has failed to carry his work on through to the finish. So it is with this life. Early manhood is not the end but the beginning of a man's usefulness.

Too often, after a brief period when he has enjoyed his life so far to the utmost, the man



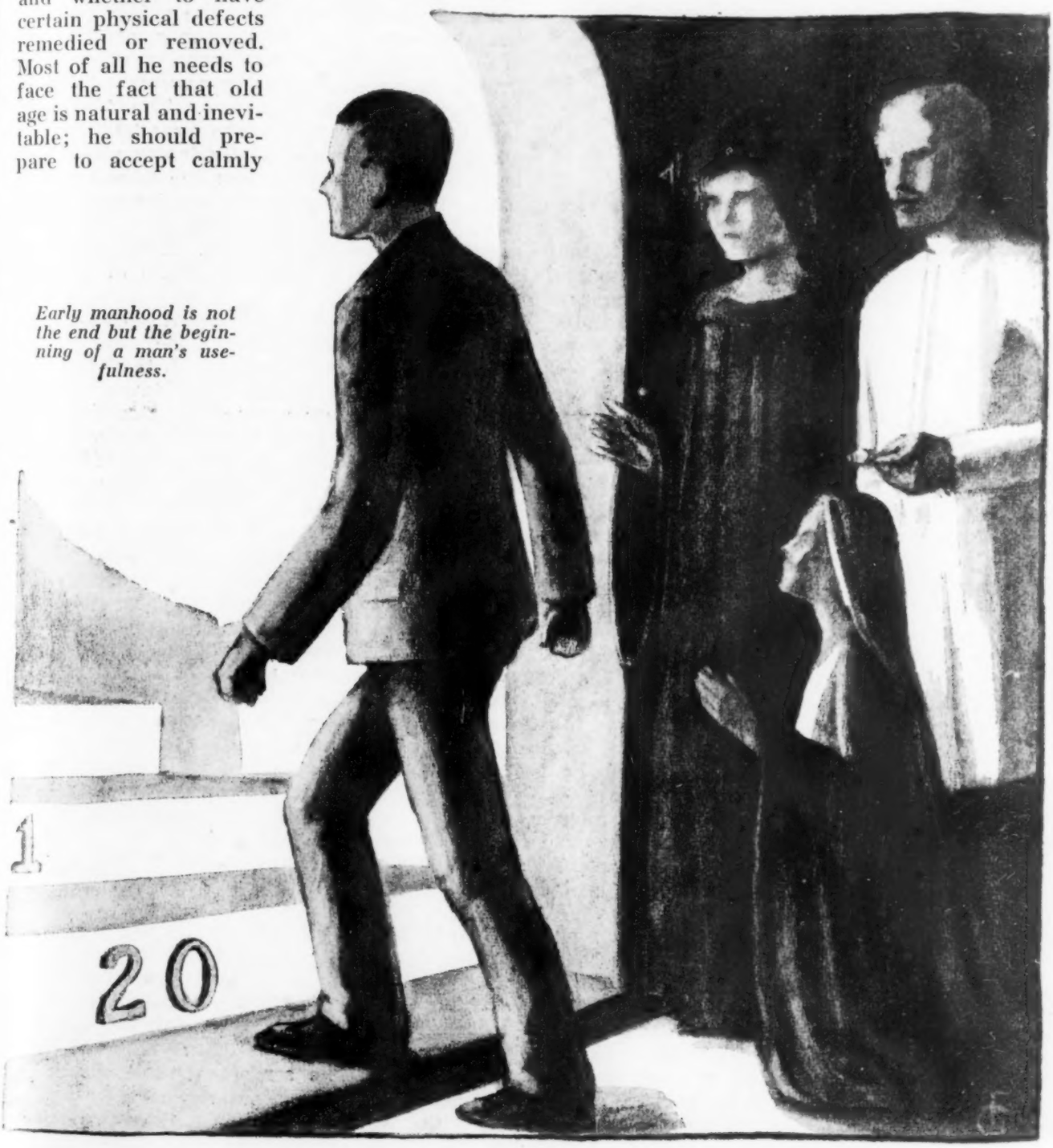
of 40 suddenly realizes he is entering those realms known as middle age and old age. Panic-stricken, he remembers the promises of youth, his unfulfilled desires and ambitions. He hastily casts aside the thought of the future and gropes on, troubled but refusing to admit lessening physical powers, refusing to plan a modified manner of living to meet the hazards of the remaining half of life.

Why is it that in the present-day conception of life it is considered bad taste for a man to reckon on and discuss the problems, the hazards and pleasures of the middle and later part of life until he has traveled almost to the end of the road? There is no one who would start in his car on a trip to California without carefully planning the route, sending the car to a garage man for a thorough overhauling, providing supplies and securing information about resting

places on the way. He does not hesitate to discuss his plans with his neighbors and friends. But the average man plunges on and on through the years past 40 without even looking at the oil gage of humanity.

Why should he not use the same care and forethought in continuing his life along the same planned and ordered lines as it followed under the guidance of parents, schools and other factors when he was a boy? Sitting down and considering the remaining half of life and making plans for an altered existence is not a sign of senility. The person of middle age needs to plan whether to take more exercise or to lead a less active life; whether to reduce or to gain, and whether to have certain physical defects remedied or removed. Most of all he needs to face the fact that old age is natural and inevitable; he should prepare to accept calmly and joyfully his place as an elderly man when the time for that acceptance shall arrive.

While youth may hold first place in our memories and ideals, it is the middle-aged or the elderly man to whom we turn for responsible positions and sound advice. For the man past 40, with his accumulated experiences, is the man with mature judgment. He has had both success and failure in the past and is, therefore, better fitted to plan for success. He is seasoned enough to have a full perspective of life and to see all things in their proper proportion. He has seen the ebb and flow of monetary values; hence he does not lose judgment in times of depression or *(Continued on page 734)*



Early manhood is not the end but the beginning of a man's usefulness.

H. Armstrong Roberts

Dog Laws

"LET SLEEPING dogs lie" is an old proverb. "Let stray dogs alone" would be a better rule. It is the bites of rabid vagrant dogs that cause most cases of hydrophobia. Since there are more wandering dogs in summer than in winter, it is sometimes believed that rabies is a disease only of the warm days or "dog-days." It is not. It may occur at any season.

The danger of taking up a stray dog is well illustrated in the July issue of the *U. S. Naval Medical Bulletin* in the account of an outbreak of rabies on the Destroyer Edwards. When the ship left Chefoo, China, in October, 1931, a sailor smuggled a little vagrant dog on board. The dog had aroused his sympathy. He carried it in his coat pocket. Several of the sailors tried to pat the little fellow and were bitten on the fingers. One man, who tried to pat the dog's head while the animal was still in his friend's pocket, was bitten. In all, eight men suffered what seemed to them unimportant dog bites. Apparently not wanting it known that the dog had been taken aboard, they did not make a report of their injuries to their medical officer.

Almost a month went by, a precious month since in that time the victims could have had the Pasteur treatment of inoculations against rabies, a treatment that would have safeguarded their lives.

On the twenty-ninth day the first man was admitted to the hospital at Canacao, P. I., complaining of vomiting each time he attempted to swallow and also complaining of pain in the arm. The patient grew worse rapidly and died of hydrophobia the day of admission. Having heard of this death, the next day the other seven men presented themselves at the hospital. They were immediately put on vigorous antirabic treatment. In spite of this, one died of rabies the next evening, another two days later, and within forty-eight hours still another died. In a desperate effort to save the lives of these men the naval medical officers obtained blood from men who by chance had recently had the complete series of Pasteur inoculations, the taking of which requires several weeks. With this immune blood serum from the volunteers, the doctors made vain attempts to save the lives of their stricken patients. In one case the serum seemed to cause definite improvement but this proved to be but temporary. The four who failed to contract the disease were taken to the operating room as soon as the fourth case began to develop, and all scars of the bites and the surrounding tissue were dissected away. Antirabic treatment was continued. This operative procedure was something new. It probably contributed to the escape from death of the last four.

For the benefit of those persons who are ignorant of the horror of this disease, allow me to quote from the article of Drs. J. E. Fetherston and G. F. Cooper of the U. S. Navy: "Never was a disease more aptly designated than this one when it was given the name hydrophobia. These patients had no particular fear of liquids, but it was fear of water per se. When the disease had progressed to an acute stage in each case, the mere mention of the word water would send them into a spasm, and in one patient would cause him to become maniacal, even to the point of trying to knock the glass out of an attendant's hands with his head whenever a glass of water was shown him. One patient stated that he first noticed his difficulty in swallowing when he heard water running in the bathroom. Another stated that he cupped water up in his hands to wash his face and that the 'smell' of it nauseated him and caused him to vomit. The other two discovered that they could not swallow when they attempted to take a drink of water the first thing in the morning."

The horror of the disease can be nothing new to those who have read in "The Story of San Michele" of the six Russian peasants who were bitten by a pack of mad wolves and were sent by the czar to the Pasteur Institute in Paris. They were bitten in the face and were almost certain to die. Each day, Pasteur came to inoculate them. The ninth day the first one showed signs of the disease. Soon all were raving mad. The screams and howls of the doomed men were heard outside the hospital in the Place Nôtre Dame.

An Article for Those Who Love Dogs But Love Their Children More

By

RICHARD E. STIFEL

H. Armstrong Roberts

Rabies is one of the few diseases that are invariably fatal. People have recovered from yellow fever, meningitis, streptococcus septicemia, peritonitis and the plague, but rabies, says Osler, "when once established is hopelessly incurable." The treatment discovered by Pasteur in 1885 is only preventive. It must be given in time. Even then in the case of severe face injuries particularly by wild animals, which seem to develop the most virulent form of the disease, it is not always successful.

It is hard to understand how any one who knows about rabies and the dreadful death it causes can object to the only certain way of eradicating it; that is, the enforcement of stringent dog laws. The licensing of dogs, the capture and destruction of all vagrant dogs and the universal muzzling of dogs control the disease. It is the muzzling of all dogs in public whether they are free or on the leash that is of prime importance. That a dog may be unmuzzled in his owner's house and on his owner's property goes without saying; but on the byways and highways the unmuzzled dog should be subject to capture and to destruction or to the payment of a fine by his owner the same as an unlicensed dog.

By strict dog regulations, Denmark, Norway and Sweden have not had a case of rabies in fifty years. It is almost unknown in Holland and Switzerland. Yet the state of Ohio alone, and its record is not unusual, had fifty-eight deaths in the last ten years. Fifty-eight deaths are recorded in the Ohio Health News, the publication of the state department of health. No mention is made of the thousands of children and adults who were bitten and mutilated by vicious dogs or of the expense and pain to which thousands were put in the administration of the Pasteur treatment.

The Swiss have abolished hydrophobia. One cannot accuse these people, who have bred and trained their beautiful St. Bernard dogs for heroic feats of rescue in the Alpine passes, of lack of affection for dogs. The Swiss love their dogs, but they love their children more. The admirable and fine traits of dogs are known to every one. Is there any one who, having seen a Scotch collie rounding up sheep on the Scotch moors, has not marveled at the intelligence of dogs? They are man's best animal friends. Even in prehistoric time when the advancing ice again and again drove primitive man to the southern fringes of Europe, his faithful dogs stayed with him in his caves to the last. Today, but for the Eskimo dog, transportation and habitation would be all but impossible in the far North. Dogs that lead the blind, bird-dogs, bloodhounds, police dogs and watch-dogs present other examples of service to mankind. Dogs deserve man's gratitude.

This proper affection should not be misdirected, however, into opposition to adequate dog laws and their enforcement. Let us be reasonable about dogs as was Pasteur. No one ever liked dogs more than he. It is said he insisted that the keepers of the kennels of his laboratory should be lovers of dogs to insure the animals the most kind and considerate treatment. This was when he was experimenting with rabies and when he was testing his vaccine on dogs. Misguided persons objected. They did not know the danger that beset Pasteur himself when he drew saliva from rabid dogs into glass pipettes. They did not know that he never subjected an animal to pain that he would not willingly have borne himself if by so doing he might relieve or prevent human suffering. The suffering of those few dogs is as nothing beside the untold human suffering that has been prevented by the Pasteur treatment. The prevention of human suffering like that of the unfortunate men in the U. S. Navy should be our objective in demanding the enactment and enforcement of proper dog laws.

A Diabetic Patient Looks at Life—

In the Shadow

"QUICK, Watson, the needle!" At one time or another, most persons have heard or used this all too common expression which suggested and meant but one thing—dope. Most persons have a natural horror of dope and its attendant destruction of the human mind and body, so that any user of it or any one suspected of using it is viewed with loathing and contempt. The needle and drug addiction are associated as closely in the mind of the public as are food and hunger. Yet there are tens of thousands throughout the world who depend on the needle—not for false courage and grandiose dreams but for their very lives. They are the diabetic patients, the users of insulin. I am one of them. Sixteen months ago I was told that I had diabetes mellitus, and for more than a year I have had recourse to the needle at least twice daily.

Naturally when the doctor told me, I was startled and inclined to ridicule his diagnosis. I had the usual conception of the ailment and could not comprehend how I had contracted the disease. I was not a user of sweets to excess, and I led a fairly active, vigorous life.

Defining the Disease

Just what is diabetes mellitus? I asked the doctor then, and I have been asked myself scores of times since. Diabetes is defined as a metabolic inability and insufficiency. This probably is clear enough for the medical profession but I had to have something my lay mind could grasp. I found that it means simply an abnormal condition of the body which does not permit the thorough utilization of the foods taken into the body; this is evidenced by the sugar present in the urine. The exact cause of this condition is not known although any number of theories have been advanced. Physicians admit, however, that they know little concerning diabetes aside from the fact that certain glands cease to function and that certain definite symptoms and physiologic changes appear in the diabetic patient.

The popular idea of diabetes that has come down through the ages—Aristotle mentions it—is that the blood of the victim turns to water. Indeed, there is an apparent basis of fact to foster this belief. Before the use of insulin is instituted and before the diabetic patient may be aware of his true condition, he passes an enormous quantity of urine in a day and the passages are annoyingly frequent. There is a burning thirst that will not be satisfied even though he drinks incessantly. He is amazed at the vast amount of food that he can eat and still be ravenously hungry. In spite of this gorging, he loses weight.

New Conditions Arise

Along with these symptoms comes the realization that any effort tires him; even light tasks that used to be a pleasure are no longer possible. Life loses its former savor. He is liable to become unsociable and morose and often irritable, flying into a rage on slight provocation. The old desires and cravings are gone, to be replaced by a savage appetite and a knowledge that his physical condition makes dances, the theater, games and other places where people are more or less massed impossible without embarrassment to himself and to others. The road ahead may well look bleak and not worth the while. I know that it did to me.

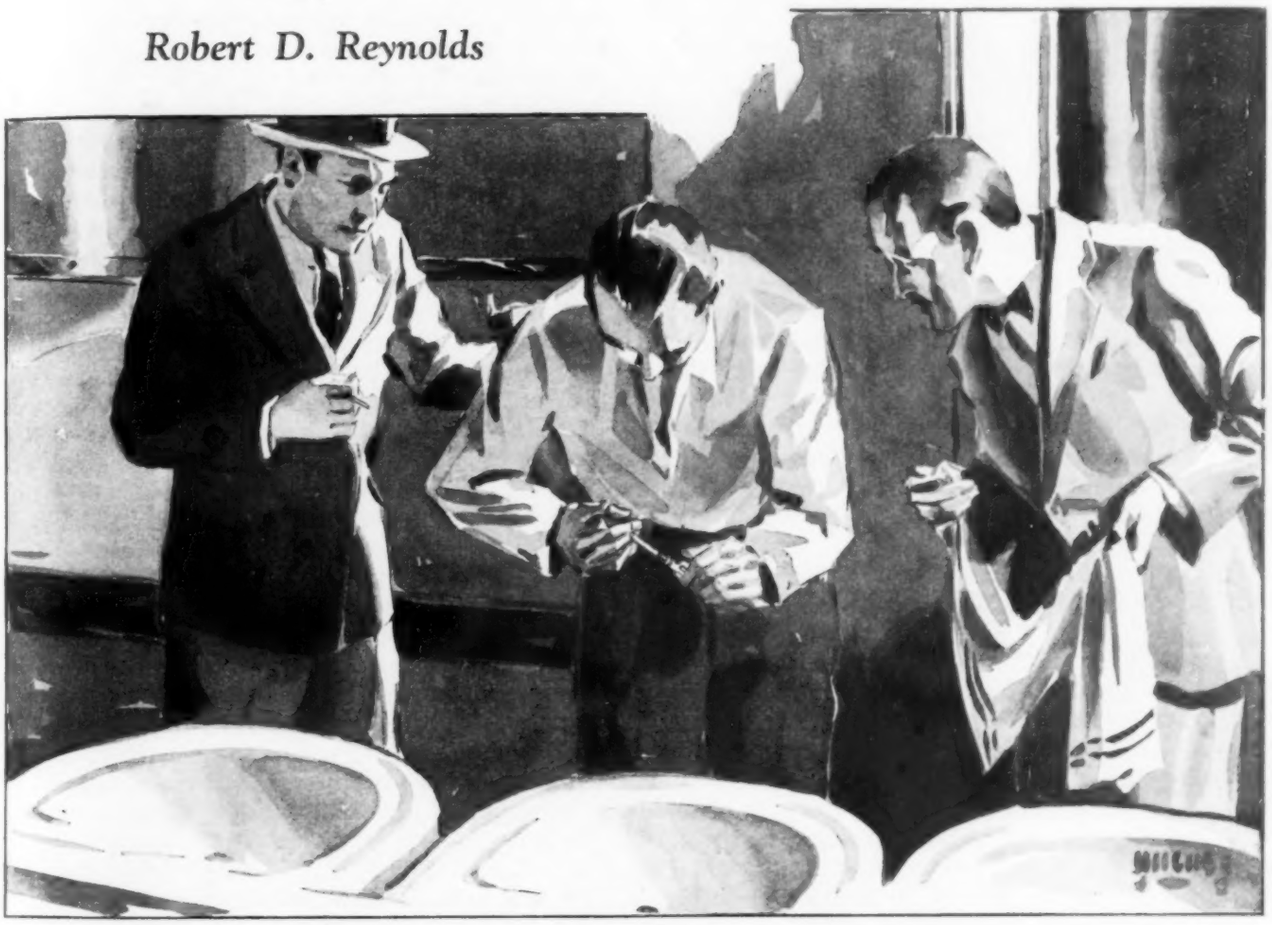
I was more fortunate than the average individual who discovers this grim and expensive stumbling stone in his path. I was in the army at the time and was immediately hospitalized. I had a doctor who gladly explained what he knew of it and gave me books to read on the subject. The first was Dr. Elliot P. Joslin's "Diabetic Manual"; later I read Dr. William D. Sansum's "Diabetes Mellitus." Diabetes, then, from being merely something of which I had heard little and knew nothing became an all-engrossing and vital study. I found that it is only in the last few decades that what little is known about it has been discovered. The first real progress was made by Langerhans when he uncovered the root of the evil in a group of minute glands lying in the neck of the pancreas. The pancreas is one of the most important organs in digestion and is shaped somewhat like an elongated comma or a long-necked squash; it is found in the fish hook formed at the small end of the stomach. The tiny glands in the pancreas are ductless, and their secretion is absorbed directly by the blood. Langerhans found that if they were removed from the pancreas of a dog, the animal exhibited all the symptoms of diabetes. He could not, however, obtain more than an impure and useless extract from these glands, and those who followed him

of the Needle

By

Robert D. Reynolds

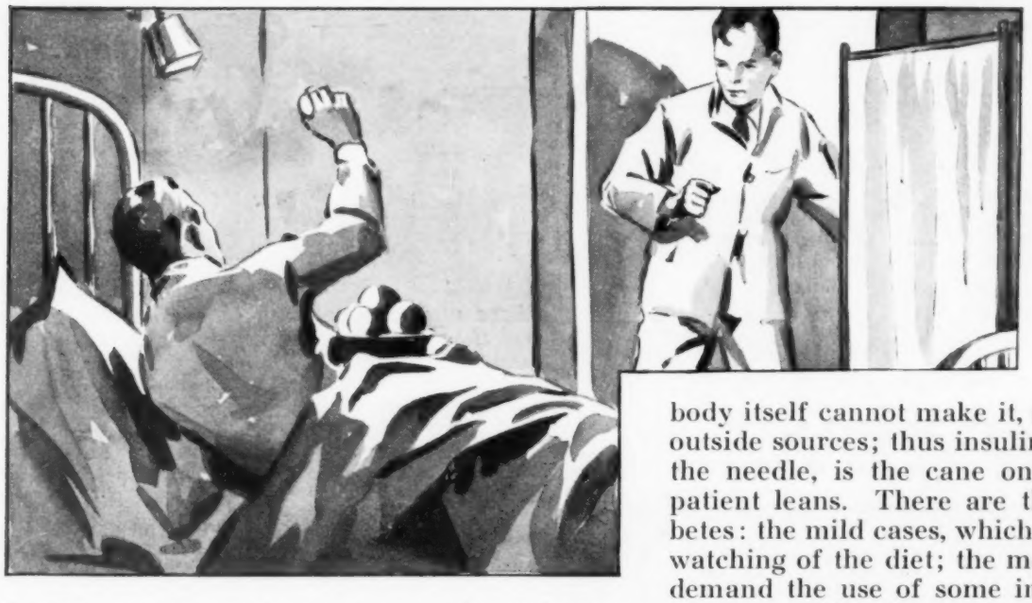
There were several men in the washroom, and they eyed me and my innocent needle aghast.



likewise failed. It was not until 1922 that two young physicians, Drs. Banting and Best, while experimenting in the laboratories of the University of Toronto, succeeded in isolating a fairly pure substance which they named insulin. On test it lowered decidedly the blood sugar of a rabbit in which diabetes had been artificially induced.

Medical science had performed another miracle, and to the diabetic patient it ranked with the greatest marvel of all times. It meant a new hope and life for him. Prior to the introduction of insulin the sole method of treatment was a rigorous and rigid diet from which he might deviate only at the risk of an unpleasant death. This diet allowed no more than a bare existence. The diabetic patient was doomed to lead an ineffectual and almost bedridden life.

Those who essayed the once popular Eighteen Day Diet and other strict diets a few years ago were living on the fat of the land in comparison to what the diabetic patient had to face if he was to live at all. His vegetables were boiled not less than three times, and the water was carefully drained off after each boiling. His bread was a hard, unpalatable mixture of the husks of bran from which all food had been washed and agar-agar, which is made from a seaweed. These bran muffins came to be facetiously known as dog biscuits by us at the hospital. The portions of meats and fats were quite large, as most of the food value had to come from them. We were allowed seemingly microscopic bits of fruit and a tasteless gelatin for dessert. Saccharin, which is 500 times sweeter than sugar, is still used for sweetening, but it does not lend



In the final stage of insulin shock the patient may be delirious.

itself to cooking with any degree of satisfaction. Pies, cakes and the other "sweets" of life were only memories or what one saw others eating unless one "cheated," which was, and still is, always a risky procedure. Two men have died for their cheating since I have been in the hospital—one from food and the other from whisky. I enjoyed little of the old style diet, for shortly after I came to the hospital we were changed to the higher carbohydrate diet which is made possible with insulin. Insulin had been used with the other diet from 1922, but much experimenting has had to be done in the short time since it was discovered.

The Modern Diet Is Most Welcome

The present diet has little resemblance to the old, and we must thank the great physicians who have led this field for their untiring efforts to make the lot of the diabetic sufferer easier. It will be difficult for most persons to realize with what joy we welcomed the prodigal potato and soft, chewable bread. In comparison, the milk and honey so favored by the gods is insipid food. And then, luxury of luxuries, we are allowed an occasional piece of pie. I admit that it is an extremely small morsel, but it is pie. Vegetables are no longer boiled until they are tasteless. True, everything is still weighed out in accordance with a ratio determined by the body weight, but it is now sufficient to live on and not just exist.

I repeat that most of this is due to the use of insulin, a colorless fluid extract taken, for commercial purposes, from the pancreases of beeves although it is to be found in every living tissue. Insulin is not a cure for diabetes; there is no cure, as yet. Diabetes, unlike tuberculosis, diphtheria, measles or other infectious diseases, is not caused by some bacteria or germ but is the result of the cessation of normal function in a certain portion of the body; this is the portion which manufactures insulin for us. If the body itself cannot make it, one must get it from outside sources; thus insulin, taken by means of the needle, is the cane on which the diabetic patient leans. There are three degrees of diabetes: the mild cases, which require only careful watching of the diet; the moderate cases, which demand the use of some insulin; and the total cases in which the patient, in all probability, will have to look to the needle for his entire supply of insulin as the amount manufactured by his pancreas is practically nil.

Now that diabetes was my constant bedfellow, how long would he let me live? I was scarcely 25, and there was so much that I still desired of life. Before the isolation of insulin there would have been small hope for a prolonged life, especially for me since I was still young and since diabetes is most severe in the child, the adolescent and the young adult. Today, however, the expectation of life should be as great as that of the normal individual, if not greater. Everything depends on the strict adherence to the diet and the use of insulin. To stay on the diet is often arduous as the patient sees people all about him eating the food he craves, and in many cases the craving conquers. Of the two men mentioned previously, one used to indulge in periodic candy "jags."

The Diabetic Coma Is Serious

When one discontinues the use of insulin with disregard to the diet, diabetic coma is almost certain to result. This is a most serious condition and warrants all the care of a major surgical case. Unlike insulin shock, of which I shall speak later, the onset of coma is gradual. The patient feels drowsy, his head aches dully, the thirst increases as does the frequency of urination while, strangely, hunger is diminished. The breath has a sweetish odor of over-ripe fruit. As the patient goes more deeply into coma, he experiences great difficulty in breathing. There is a literal air hunger. Although he is in an open, airy room, he breathes abnormally deeply and rapidly with a harsh, rasping sound. He is burning up, or so it seems; his mouth and throat are as dry as the proverbial lime kiln and, in all probability, he cannot swallow the water for which he thirsts so urgently, or, if he is able to swallow, he cannot retain it in the

stomach. He may have hated the needle before, but the needles that must go into his flesh now are far more terrible. He must have water immediately. This is administered in two ways: by means of the rectal drip and by injection of a sterile salt solution directly into his veins. Enormous quantities of insulin must go just under his skin. At times he may be unconscious, but often he realizes vaguely this awful thirst and pain. Not a pleasant demise for the sake of a few moments of epicurean pleasure!

As a general rule, however, the diabetic patient, unlike sufferers from better known diseases, does not experience discomfort or pain. Diabetes, properly cared for, should seldom prove fatal. The greatest danger lies in the complications that may arise. The tiniest scratch may mean grangrene, for example, while tuberculosis and kidney trouble are a constant menace. Life depends, then, to a great extent on the much maligned needle.

Insulin Shock Manifests Itself Strangely

But there is an amusing side to taking insulin. Occasionally one gets too much, and then the phenomenon of insulin shock is witnessed. This is the result of the subnormal lowering of the blood sugar. To describe this accurately is impossible. One learns only by the experience. One finds it more often manifested in total diabetes than in the other two degrees. To the average person there is little difference between the manifestations of shock and those of the last stages of liquor intoxication.

As in coma, there are certain well known symptoms which precede this condition, and the diabetic patient does well to heed them, as a true reaction is far from pleasant. In no two individuals are these the same, although the general symptoms are a feeling of nervousness, apprehension, hot flashes over the body and later a profuse perspiration and an inability to coordinate muscular movements. In the final stages the patient may be delirious.

Only recently a doctor was arrested for driving while under the influence of alcohol and had rather a difficult time explaining to the judge the difference between alcohol and insulin because the results are quite similar.

Another incident concerns a nurse in San Antonio who completely lost control of her automobile so that several parked cars were damaged as well as her own. A friend of mine who knew her happened to be in the police station when she was brought in and recognized her condition. He, too, had a strenuous few moments convincing the officers that the lady was not drunk.

The treatment for shock is the immediate eating of candy, oranges or other foods having a high sugar content. Persons with diabetes should have identification cards at all times so that if they are found in a stuporous or unconscious state they may receive prompt and correct treatment.

I probably would not have had the humiliating experience that I did a few months ago if I had had my card with me. I had attended the theater, and before going out to dinner I retired to the men's lounge to take my "shot." The bright lights over the lavatories were essential for me to read the scale on my syringe, and the glass shelf was convenient for holding the materials. There were several men in the washroom, and they eyed me and my innocent needle aghast. One of them left. Shortly thereafter, before I had finished with the needle, the head usher came in with one of his men. The head usher informed me in no uncertain terms that I was not wanted, and that if I lingered he would be forced to call a policeman. I told him that I was only taking my insulin. He replied that I might call it that but that he knew it by another name. No doubt he would have carried out his threat to have me arrested or, at least, to have me summarily ejected from the theater had not a man entered who recognized the needle I still held in my hand and the little green-labeled bottle still on the shelf. He told me later that he had a brother-in-law who had diabetes. Between the two of us, we managed to convince the usher that I was not a drug addict. He was extremely apologetic and told me that that was his first meeting with insulin.

Public Lacks Knowledge of Disease

I am certain that there are any number of men and women who have suffered like embarrassment through the lack of knowledge on the part of the public concerning the diabetic patient's need of the little needle. The person with dyspepsia may take his pills openly, as do the victims of other chronic illnesses, but the diabetic sufferer is forced to hide if he takes his insulin outside his own home.

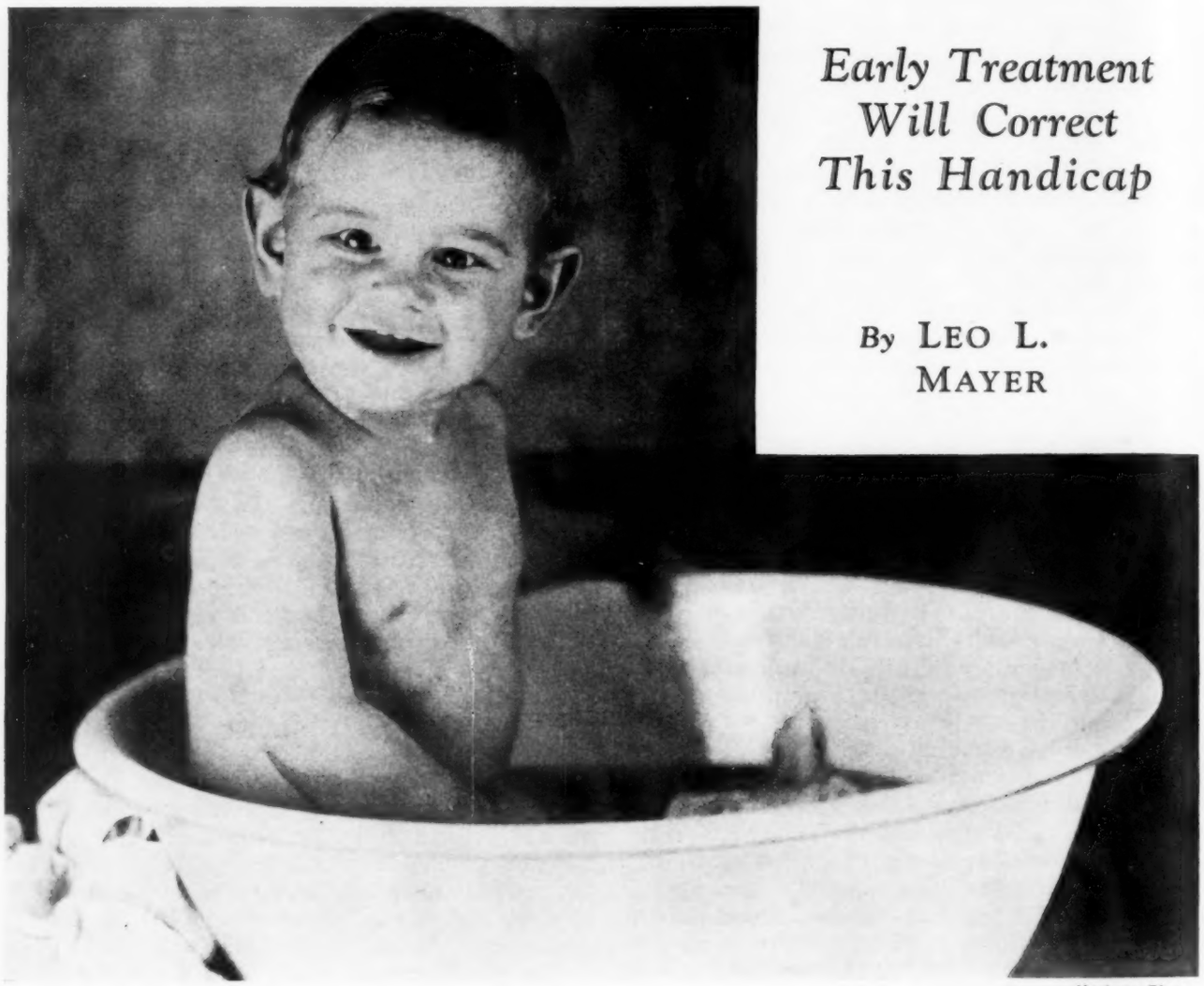
The question most often asked, as all doctors who have treated diabetes can probably verify, is, Can insulin be taken by means other than the hypodermic needle? Decidedly not, if it is to be effective. It is necessary for insulin to be introduced under the skin and not too deeply into the muscles where it will be absorbed by the blood stream. The powerful stomach juices have a deteriorating effect on it so that it is worse than useless when taken by mouth.

It is absolutely necessary, then, for the person with diabetes to use his needle. He is not taking any form of drug. He is taking, however, a substance most vital to him, one that acts on the blood sugar as the spark acts on the gasoline in an automobile. It is his life. He asks the public to be a bit more considerate of him and of his needle in whose shadow he must live. Perhaps some day he may feel free to use it in public without the present feeling of quasi-shame and humiliation.

THE CROSS-EYED CHILD

Early Treatment Will Correct This Handicap

By LEO L. MAYER



Herbert Photo

AT LEAST 200 years ago methods for the correction of crossed eyes were instituted. However, it is only in the last fifty years that any progress has been made, and the last five years have seen this work in the field of the eye specialist grow by leaps and bounds. The reasons for this recent enthusiasm are a better understanding of the underlying causes and more attractive methods and instruments for correcting such a difficulty.

The newly born infant sees objects indefinitely; therefore he is unable to fix both eyes on an object for any length of time. The eyes move about in a strange fashion and are wholly incoordinate. Such a state exists until between the ages of 3 and 6 months when cooperation between the two eyes takes place. Thus in the young infant to notice that one eye turns in or out is not of so much importance. The exception to this rule is found in infants who may have a paralyzed muscle in one eye owing to a birth injury or some other cause. In this case a constant position of one eye is noticeable; this calls for immediate investigation.

After the age of 6 months it may be noticed that the infant's eyes are crossed only at times of emotional stress, such as in fear, anger or fatigue. On the other hand, there may be a constant turning of an eye, which is most apparent. In either case an investigation should be made at once, for children do not outgrow this condition.

Naturally the question arises, Why should crossing of the eyes occur in one child and not in another? Normally the two eyes are used together to effect a state of what is known as fusion. This use of the two eyes together is one of the last factors added in the scale during

evolution. It enables the individual to gain perspective of objects, owing to the fact that depth of vision is added to his ability to notice length and breadth. In lower animals whose eyes are at the sides of the head, there is no fusion as the two eyes are unable to focus on a single object at the same time.

One important factor in preventing the development of fusion is the need for a correction of errors of refraction in one eye or in both eyes by the use of glasses. Because of the fact that this important error is ignored, only one eye, the dominant one, is used for seeing. It develops through use, just as the infant's limbs develop as he learns to walk. However, the other eye becomes lazy, actually loses some of its visual ability, is unable to see an object clearly so as to fix on it, and thus it turns in or out. Usually the eye turns in, because the muscles that turn the eyes in are the stronger in most persons. Another important reason for making great effort to stimulate this lazy eye is easily realized when one considers that after all if this is not done, these individuals are in reality one-eyed, and if anything should happen to their one good eye the consequences are obvious.

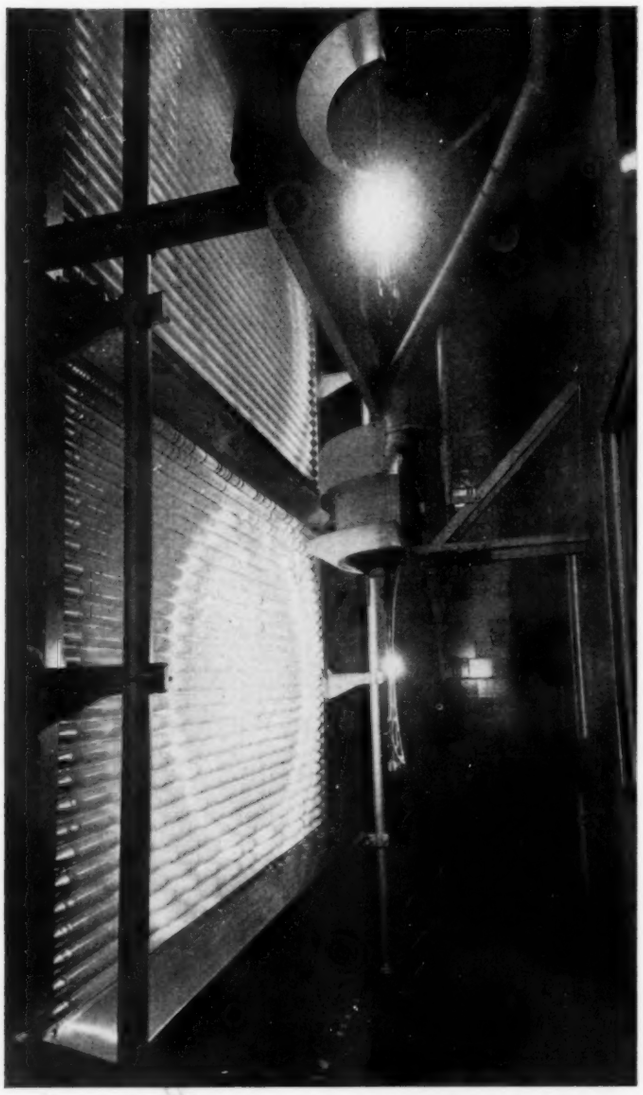
How does one accomplish the correction of such a difficulty? First, the error of refraction is determined, and glasses are prescribed to overcome this defect. This is readily estimated at any age by means of a thorough and competent examination. In certain instances, merely by this procedure the lazy eye begins to work, the eyes may indeed become parallel, and fusion may be reeducated. Later in such a case it may be found that even on removal of the glasses, the two eyes may have been so regulated by the use of glasses that they are capable of remaining straight at all times. In the majority of cases it is necessary to make the lazy eye work alone by excluding the dominant eye for long periods until the vision of the poorer eye is equal to that of the good eye. After the lazy eye is improved to usefulness, it is important that fusion, or use of the two eyes together, is trained in order to hold this reeducation permanently. It is in accomplishing this that the last five years have seen so great an advance. New instruments which stimulate vision and fusion have been made. Stereoscopic pictures which interest even the infant are procurable. Some of these are Mother Goose rhymes and stories. Others are pictures of Santa Claus, dog, cat, apple and box, which even little tots between the ages of 1 and 3 are eager to see and discuss. Indeed, many times these children urge the parents to take them to have these training methods used because it affords them so much enjoyment and is not considered a task. The child is urged to draw simple copies of pictures, thus stimulating the use of hand and eye. By these means fusion is readily reeducated to a permanent condition. Great patience is necessary, and the cooperation of the parents to aid in continuing these training methods at home is paramount. Simple devices for home use have been made and are procurable at so reasonable a price that any one can afford them.

In a few children the power of fusion is entirely lacking and cannot be developed. Early operation to give the eyes a chance to become straight before they are firmly in a crossed position is recommended in these cases. The operation is fairly simple, not dangerous and for the most part successful. It may be necessary to perform more than one operation on the muscles if the eyes are greatly crossed. No harmful effects are to be expected from these operations. Further training is used after the operation to increase its permanence.

And so it may be said that in this day and age there is no reason for any one to have crossed eyes. The earlier they are treated, the better will be the results. When one individual greets another, the eyes are the first object to meet the gaze, and any defect is of great moment. Is it any wonder that an individual knowing the effect of his crossed eyes on every one he meets becomes self conscious and develops an inferiority complex? There is no need for the school child to be constantly tormented by his companions or to be self conscious of a remedial defect. Every effort should be made early and with great patience and perseverance to bring these unfortunate children back to a state of being where there is no noticeable difference between them and their companions. Even in adults such a defect may be corrected, but that is another story. Take early and persistent care of the cross-eyed child.

Wide World Photo

Drawing stimulates and reeducates the eye.



Photos by courtesy of Borden's Farm Products Company

Milk which has been properly irradiated with the carbon arc lamp will cure and prevent rickets in young infants.

VITAMIN

AN ANNOUNCEMENT of great significance to infant and child welfare was made at the Annual Meeting of the American Medical Association in Philadelphia in June, 1931. On that occasion, Dr. Alfred F. Hess of New York City reported that he had recently completed a successful clinical test with a new type of cow's milk, a certified milk so rich in vitamin D that it could prevent and cure infantile rickets.

A month or two after this interesting announcement, a new product known as vitamin D milk appeared on the market in New York, Boston and Philadelphia. Today this special type of milk is obtainable in more than one hundred American cities in twenty states. It is rapidly becoming a familiar commodity in the United States, but many persons have rather vague ideas as to what it is, how it is prepared and what is the proper way to use it.

The development of vitamin D milk represents an important advance in dairy science, because vitamin D is one of the few dietary elements that are not present in the average market milk in adequate quantities. Although milk is unique in that it contains all the known vitamins and is an exceptionally good source of the essential growth-promoting vitamins A and G, it is rather low in the antiscorbutic vitamin C, and in the antirachitic vitamin D.

Vitamin D itself has been so widely exploited and is now available in so many forms that it is probably the best known of the six recognized vitamins. It has been called the sunshine vitamin because the action of the ultraviolet rays of direct sunlight on the human skin produces the vitamin in the human body. Since Nature intended man to be an outdoor animal, fully exposed to the beneficial action of undiluted sunlight, she neglected to put vitamin D along with the other vitamins into his common foodstuffs.

Modern civilization with its houses and clothes, its dark city streets and its ubiquitous smoke, dust and dirt has robbed us of much of our sunlight. As a consequence, we have been forced to secure our supply of vitamin D from the few other sources in which it is available. These are artificial sunshine and a limited number of foods, such as fish oils, egg yolk, and butter of good quality.

Many centuries ago some obscure fisher folk in northern Europe found that oil from the livers of the cod and other fish would cure the bone disease known as rickets. Just when that vital discovery was made is not known, but it must have been shortly after the disease itself was identified some three hundred years ago. Throughout the long years since, cod liver oil has been the accepted agent for the prevention and cure of rickets.

Not until 1921 did science find the explanation for this action. In that year several investigators discovered a new vitamin in cod liver oil, which was already known to be a rich source of the fat-soluble vitamin A. Since this was the fourth of these accessory food factors to be identified, it was called vitamin D. About the same time, scientists noticed that sunlight also had a beneficial effect in the treatment of rickets.

This knowledge was carried a step further in 1924 when Dr. Alfred F. Hess and Prof. Harry Steenbock announced independently and almost simultaneously that certain foods could be irradiated with ultraviolet light so that they were rendered antirachitic. Fluid and dried milk, yeast and cereals were found to be most suitable for this purpose. Ergosterol, a chemical substance prepared from ergot, can also be

D MILK

By
James A. Tobey

irradiated so as to give a high potency in vitamin D; it is now on the market under the name of viosterol. This irradiated ergosterol must, however, be administered only in accordance with a physician's prescription. It lacks vitamin A and is somewhat inferior to cod liver oil as an antirachitic agent.

In 1929, scientists began to feed irradiated substances to cattle on the theory that this procedure might bring about an increase in the vitamin D content of the milk. The results were so encouraging that an extensive investigation along these lines was commenced in 1930. Fifty cows at a certified milk farm were given irradiated yeast or irradiated ergosterol in their rations, and their milk was carefully tested.

Since laboratory experiments with animals proved that here at last was a real vitamin D milk, the next step was to investigate its effect on rickets in babies. A carefully controlled clinical test was undertaken in New York City by Dr. Alfred F. Hess, who placed 102 young infants on this biologically activated milk. Not only did it prevent rickets in these babies throughout the winter months when the disease is most prevalent, but the milk cured several cases which were in their incipience when the test started.

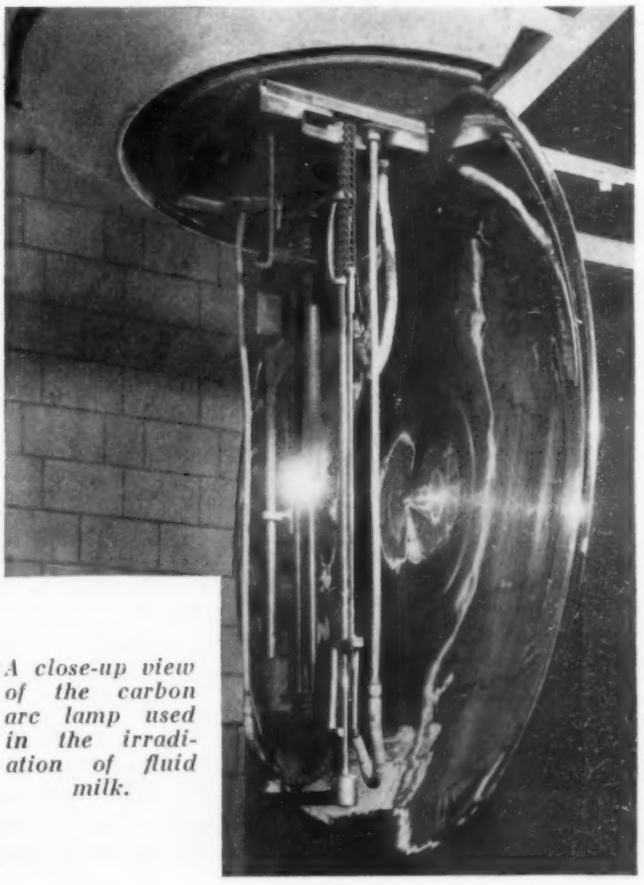
As previously stated, Dr. Hess and his associates reported their results in June, 1931, but the investigation was continued through another winter. In a second report, which came out in *The Journal of the American Medical Association* for Aug. 20, 1932, Drs. Hess and J. M. Lewis stated that the babies thrived on this vitamin D milk and did not show any signs of rickets. At the same time another test was carried out by Dr. Edwin T. Wyman in Boston, who reported that this type of milk could be pasteurized without affecting its vitamin D content and that it would cure active rickets.

Still another test of great significance has been carried out with this vitamin D milk. It has been shown by Prof. J. W. M. Bunker and R. S. Harris of the Massachusetts Institute of Technology and Dr. Richard S. Eustis of Boston that the antirachitic powers of human milk are augmented when vitamin D milk is consumed by nursing mothers. Although breast milk is somewhat less conducive to rickets than is cow's milk, even it is not a safeguard against this disease under ordinary circumstances. The taking of vitamin D milk by lactating mothers serves also to protect the mother as well as her prospective infant.

In all these experiments the scientists found that yeast milk (milk from cows fed on irradiated yeast) was more effective than milk produced by feeding irradiated ergosterol. The irradiated dry yeast must, however, be given to the cows in the proper quantities, and the milk must be carefully checked to make certain that it is potent in vitamin D. It is customary to feed at least 10 ounces of the irradiated yeast daily to each cow producing approximately 30 pounds of milk, or about 60 quarts, a day. At least ten days must elapse after the yeast feedings have started before the milk attains its full potency in vitamin D. The cows themselves seem to benefit from this type of feeding.

The production of vitamin D milk by scientific feeding of the cattle is obviously a natural method. There are, however, other processes by which the content of this vitamin can be increased in milk. Of these the most practical is direct irradiation of the fluid milk by means of carbon arc lamps. Much experimental work on this process has been conducted by Dr. G. C. Supplee.

As in the case of yeast milk, clinical tests have demonstrated that milk, either fluid or dried, which has been properly irradiated with the carbon arc lamp, will cure and prevent rickets in young infants. In 1932, Dr. A. F. Hess reported on the results of five years' investi-



A close-up view of the carbon arc lamp used in the irradiation of fluid milk.

gations on this type of milk and stated that a pasteurized milk so treated is an effective antirachitic agent. Already such a fluid milk supply is available in Detroit and several other cities. A brand of powdered milk made from irradiated liquid milk has been distributed nationally for several years.

A third method of augmenting vitamin D in milk is by the direct addition of a vitamin concentrate to the milk. Prof. T. F. Zucker of Columbia University has devised a process for removing vitamin D from cod liver oil and concentrating it. This substance is added to the milk usually by mixing and homogenizing with the cream. Such a milk is, of course, a modified milk rather than a natural one, and it may also have a slight taste owing to the addition of the concentrate. This type of vitamin D milk is on the market in several cities but is not yet as widely used as the yeast milk, which so far is the most popular with dairymen.

Milk Is Best Dietary Source of Calcium

The advantages of vitamin D milk are that it supplies the antirachitic factor in a food which is the basic diet of most infants and does away with the troublesome task of administering supplementary foods such as cod liver oil and viosterol. Milk also provides the calcium and phosphorus, or lime salts, which are as essential to proper bone formation as is vitamin D. Milk is, in fact, the best dietary source of calcium, and the maxim that every growing child should have at least a quart of milk a day in some form, or its equivalent in other dairy products, is based on scientific evidence that this is the amount necessary to furnish the calcium required.

"Obviously," says an editorial in *The Journal of the American Medical Association* for Nov. 26, 1932, "it ought to be of advantage if antirachitic properties could be imparted, without attending deterioration, in a suitable degree to a few foods that enjoy widespread use, particularly in the dietary of childhood. This would avert the uncertainties of sporadic intake of vitamin D at periods of crucial importance. Probably the two most universally consumed foods are bread and milk. That is why interest has begun to be centered in these products as means of antirachitic prophylaxis."

This editorial goes on to discuss the work of Dr. Hess and his colleagues and points out that milk is unrivaled as a source of calcium and phosphorus: "Milk remains in the limelight of nutritional discussions. Will the current possibilities and enthusiasms bring better health? That is a pertinent question for the near future."

The answer to this question would seem to be reassuring. Vitamin D milk, when properly produced and correctly used, should offer an opportunity for better community health. There is no danger of an overdosage of this vitamin, either from the milk alone or from this special milk in combination with vitamin D bread, cod liver oil, eggs, butter and irradiated foods. The only hazard in the use of a vitamin D milk is that it might be less potent than advertised and thus would give a false sense of security.

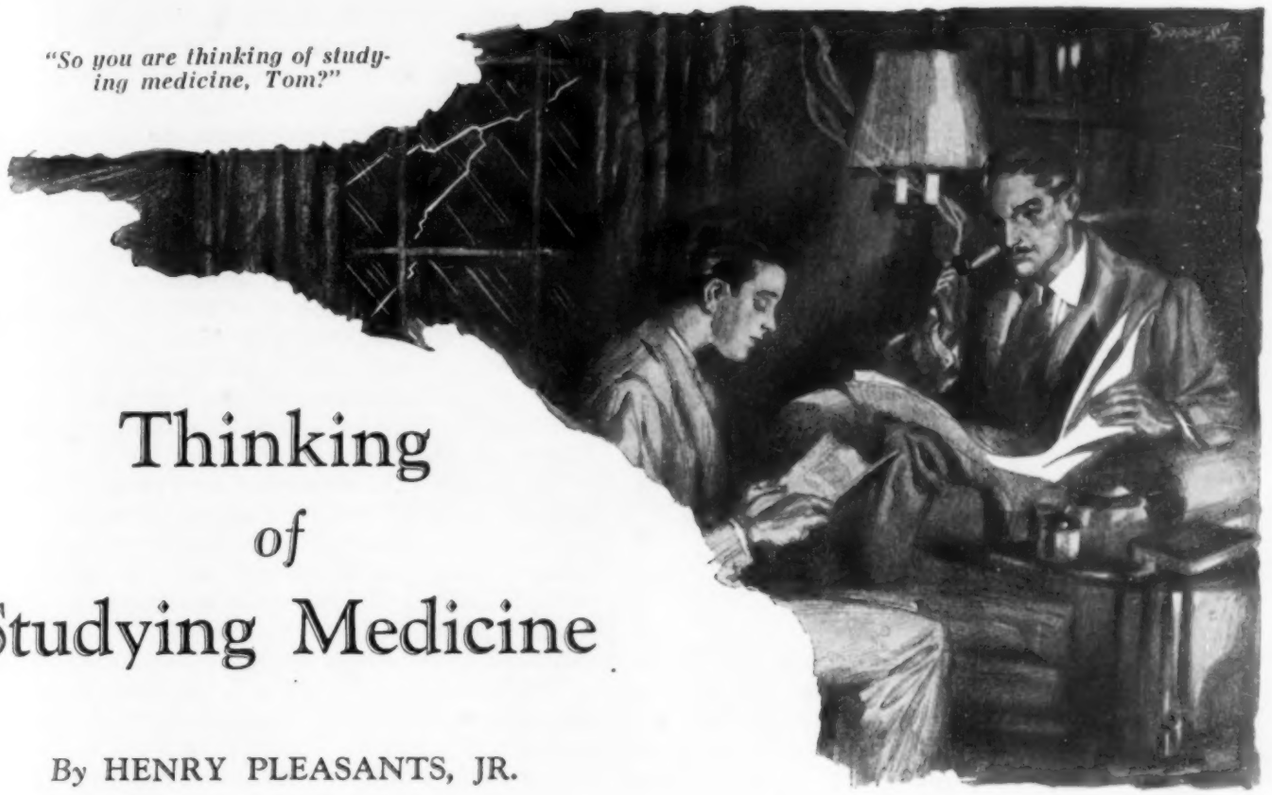
Health authorities are cognizant of this possible danger and are taking effective measures to maintain supervision over vitamin D milk in the same way that they exercise surveillance over pasteurized milk and milk production generally. The larger milk companies have too much at stake not to distribute vitamin D milk which really is satisfactorily antirachitic; that is, a milk that will prevent rickets when at least a pint and a half of it is consumed daily.

When vitamin D milk is purchased in metropolitan cities of this country from the large milk companies, the buyer does not need to have any qualms as to its potency. In smaller communities the advice of the family physician or local health officer may be secured, as these professional workers have facilities for ascertaining the exact status of local milk supplies, facilities which are often lacking to the average layman. Vitamin D milk is now an established commodity in American life, but like every other ware of significance to human health, its integrity must be assured.

Nearly forty years ago a philanthropist named Nathan Straus established a station in New York City for the dispensing of a new kind of milk, a milk that had been heated. This pasteurized milk, as it was called, had certain advantages from the standpoint of safety, but the medical profession and many citizens looked on it somewhat askance for a long time. Although slow in winning popular favor, pasteurized milk eventually became the only kind of milk allowed in many communities. For the last decade or more, 99 per cent of the market milk sold in New York City has been pasteurized, and it is estimated that more than 80 per cent of all milk in the United States is now pasteurized, as indeed all milk should be except that known as certified.

Possibilities for Future Development Are Vast

The time may come when all milk is also vitamin D milk, produced under carefully supervised conditions and guaranteed as to antirachitic potency. When that time comes, rickets, which now afflicts about 50 per cent of all white babies in North America and an even greater percentage of Negro infants, will be as rare as the once dreaded scurvy. It will be rarer than smallpox and less frequently encountered than typhoid or diphtheria, all maladies which could be exterminated by established methods. Vitamin D milk will sound the knell of one of the great scourges of mankind, and in that capacity it will be one of the most important factors in the promotion of national vitality.



"So you are thinking of studying medicine, Tom?"

Thinking *of* Studying Medicine

By HENRY PLEASANTS, JR.

DR. BRANCH leaned back in his chair, blew a cloud of smoke toward the crackling wood fire and studied the face of his son thoughtfully. The hour was late, and a cold rain beat savagely against their cabin in the northern woods; but the snug warmth of the study drove away all thoughts of bed.

"So you are thinking of studying medicine, Tom?" Dr. Branch observed slowly.

"Yes, Dad, I think I'd like it."

"Well, there's nothing that would please me more. But if you are considering doing it just to please me, I'd rather you would study anything else rather than medicine."

"Why do you say that, Dad?"

"Because you would never be content," the doctor replied. "Of course there are many men who have been highly successful in the medical profession and who were urged into it by their parents. There are many instances when a boy needs to be ordered to do his life's work; but I do not think that such a plan is a wise one, particularly in your own case. I'm so pleased with the idea that I'm almost afraid I'll encourage you too much." Dr. Branch's eyes lighted with the thought. "We've been interested in many things together, and I think we would make a good team. However, I want to be perfectly fair with you in discussing the subject; there are many features of the medical profession that you have not understood.

"Let's begin at the beginning. To enter a first class medical school one must have college preparation. There are no excellent schools that admit students without it. That means from two to four years of college work. I think it is a wise requirement, for it does give a young man a chance to know his own mind; it also gives him a smattering of other subjects. The college course is something of a weeding out process. If a fellow can get through, there is a reasonable chance of his being able to pass the medical school exams. He will at least have learned how to study. Then, too, a fellow who has been an athlete in college is not likely to be drawn into too much athletic work in the medical school; whereas, if he entered the medical course fresh from some prep school, he would be tempted to crowd all his collegiate activities into his preparatory professional work. The two do not mix well.

"Now add four years of medical school to your years of college. In some universities there are arrangements whereby a man can combine the last years of college with the first years of medicine, thus making a total of six or seven years instead of eight; but many men nowadays finish college before studying medicine. Then you must add to the medical school course one year or two years of hospital training before you are really equipped to practice medicine. Some states require the hospital year; some do not, but it is so necessary that it is generally accepted as a finishing touch to medical study."

"That sounds like a good deal of expense to you, Dad," the boy remarked. "At that rate, I would not be on my feet for nine years. I'd be 30 before I'd be settled in practice."

"I know that, but I'm not objecting, am I? I'm simply telling you a few facts. There was

"Seriously speaking, the course in medicine is hard!"

a Negro who was a conscientious objector in the army during the World War and who one day announced to his sergeant that he would not fight for anybody. The sergeant listened patiently to him and then said: 'Boy, Uncle Sam ain't askin' yo' to fight nobody. He's jes' goin't' put yo' right up in th' front line trenches war de fightin' Germans is, an' yo' kin use yo' own judgment after that.' The choice of a profession is a matter of judgment. That's why I'm telling you all the disconcerting features."

"The course at the medical school is pretty stiff, isn't it, Dad?" Tom inquired. "You know I did not stand high in school. I might flunk the first year."

"Yes, you might, but I don't think flunking is in your line. You have always failed in the subjects that did not interest you. If you failed in medical school, I'd simply say, 'Well, it was worth the price to be sure,' and let it go at that. Yes, it is a stiff course. But, you remember, I went through with fairly high honors after nearly being thrown out of college for low marks.

"Seriously speaking, however, the course in medicine is hard now. Medical schools have stepped up far in their desire to raise their standards. There is much technical and research work in their curriculums. The students are given an insight into the various possibilities of each specialty. Your great-grandfather practiced medicine; when he started in, he apprenticed himself to an older physician. At the same time he attended lectures at the university. He combined the theoretical with the practical in a thorough manner. The present-day medical schools endeavor to do this by ward work and clinic work. As for the courses themselves, I do not think they are any harder than any other professional courses. A man goes to lectures and takes careful notes. He goes to a laboratory and performs certain experiments. He spends part of his evenings taking extra quiz courses under some instructor who drives home the essentials of what has been taught in the lecture room. At regular intervals he is given an examination in each subject, and he is rated according to the evidence he gives of proficiency in addition to the mark he has earned for his laboratory or clinic work. The average instructor or professor knows almost to within five points what mark each man in his class is likely to make. He knows pretty positively what sort of interest each man has already evinced. Most of the examinations are fair, even though hard, and a high caliber man seldom flunks out. The reason is perfectly obvious, for a man who is interested in medicine and has a normal mentality keeps studying all the time. He reads medicine, hears medicine, talks medicine and thinks medicine from the time he enters the school until he leaves the hospital as a full-fledged practitioner."

"But I don't know yet whether I should care to throw my whole life into that sort of study," the boy objected. "I never thought of it in that light."

"Of course you did not. No one does. As I advised you before, take four years of college to consider things seriously. During that time you will, naturally, study many subjects. You are now interested in medicine, and as you go on you will compare medicine with other professions. You will observe doctors and lawyers and engineers in their work. You will gradually form some sort of an impression as to whether or not you really like the study of medicine well enough to try it. But when you actually decide to enter the medical school, you will know in two weeks how you are going to react to the profession. If you like it, you will enter into the spirit of it and spend every spare moment of your life in study and not begrudge it either."

"There is not much money in the practice of medicine, Dad, is there?"

"No. As a profession I should say it was the poorest paid of any. The statistics collected a few years ago showed that the average income of all physicians in the United States was little more than $2,000 a year. Of course some celebrated doctors are rich."

"That does not speak well for the profession from a business standpoint does it, Dad?"

"No, certainly not. But there are many reasons that may be given for the poverty of the medical profession. One is that a man of deeply scientific mind is often a poor business man. Another is that in order to get the best out of himself, a physician must forget the financial side of the case before him until the proper time comes. Unfortunately the public in general has learned to trade on that feature of medical practice. It knows that a physician will seldom demand payment in advance and that he will

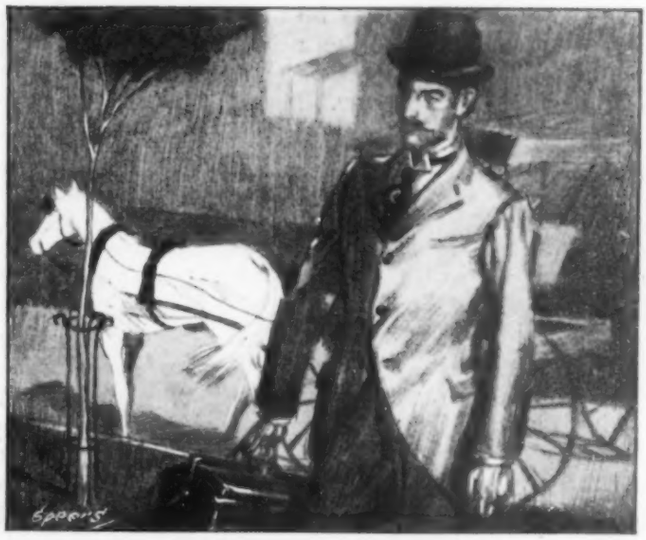
seldom sue for services rendered. The public forgets that by ignoring a doctor's bill it is undermining that physician's interest in its welfare which is the priceless asset to successful practice. The public has treated the conscientious physician rather badly and is beginning to pay for it today."

"What do you mean?"

"I mean that the general practitioner has been discouraged so repeatedly by accumulating bad debts that he either takes up some more lucrative specialty or sells his services to some institution or corporation. The small towns are not being overrun with physicians today. For a time it seemed as if the general practitioner was going out of existence and his place would be taken by groups of specialists, but since times have become hard and money scarce, it would seem as if the general practitioner was becoming more popular. Your great-grandfather used to say that he always knew when Mr. Blank had lost a great deal of money because if Blank could not afford a celebrated doctor he would call grandfather to attend the family.

"But there is really a good living to be had in the practice of medicine, if a man goes at the problem sensibly in the beginning. It takes a certain amount of dignified courage to insist on fair remuneration for efficient service. Present-day physicians may in some instances be as much interested in the scientific study of their cases as they are in the relief of distressing symptoms. People come to me with the complaint that Dr. Jones or Dr. Brown did not do anything but make a lot of tests and run up a hospital bill. They won't pay Jones or Brown for scientific information but they will pay an osteopath or a chiropractor for a series of treatments because they get something done even if it really does no good."

"A young man who thinks of studying medicine today has both my sympathy and my envy. He has my sympathy because so many important technical details have been developed since I was a student. These require exhaustive study; and it seems as if the digestion of them would be too much for the average brain. He has my sympathy because he will come out of the medical school with his mind in even more of a jumble than was mine thirty years ago. He will have an inferiority complex that will almost crush him. He has my envy because the opportunities for excellent medical work were never better than they are today. Money is scarce, but the opportunity for doing good is unlimited, particularly in general practice. Regarding the specialties, I should say that their field of usefulness is as great as ever. Specialists are feeling the depression severely; and there are many really excellent specialists in large cities who are not able to pay their office rent. Of course, some special fields have been crowded with many men of mediocre ability and small general experience, but the failure of these men to deliver the goods when required usually proves their downfall."



The old family doctor of fiction with his gig, his old white horse and his mysterious bag is gone.

"I'd be frightened to death for fear I'd kill somebody when I first started practice," Tom Branch laughed uncomfortably. "I'd worry my heart out at night for fear I had done the wrong thing during the day."

"Probably you would worry at first. I did. I lost 10 pounds in two weeks just after I graduated, for my preceptor took a vacation and left me in charge of his large practice. I was so worried that I used to drive slowly into the country to get a rest from hearing the telephone ring. Every time I gave a pill, I conjured up visions of its acting the wrong way. Every time I opened a boil, I was sure that blood poisoning would develop from some failure of my aseptic measures or that the patient would die of hemorrhage because I had cut too deep. I never put in such a miserable period in my life. When the chief came home, I felt like kissing him. The queer thing about it all was that two or three seriously ill patients actually recovered. After a month or so, I gained confidence in myself."

"But don't you worry now over your cases? I know perfectly well you do, Dad."

"Of course I do. But I've learned how to worry and when to worry. If a case baffles me, I try to study it as exhaustively as possible and leave no stone unturned that is reasonably likely to cover an important detail. That process is a definite outlet for my worry. I am doing something. I try not to do anything radical in a dangerous situation unless I have good reason to do it and can feel confident that if the procedure should end in a calamity I would feel justified in having taken the chance. Then, also, I never lie to a patient or the family. It is bad, bad practice. If I do not want the patient to

know the truth, it may be necessary to avoid the subject or distract the attention; but lying is pernicious and unnecessary. Suppose I suspect that a man has cancer. He asks me whether or not he has. I may be convinced that he has, but there is so much room for my impression to be wrong that I would do him infinite harm to tell him my suspicions. The easiest plan is to tell him that he has evidence of serious trouble which may not respond to treatment and say frankly that I am not sure whether it is malignant, even in the presence of confirmatory laboratory tests, because I have seen some cases diagnosed as cancer and treated as such, in which a complete recovery was made. By being as frank as that, you will put it up to the patient whether he will give up on the theory that he has cancer, or fight it out on the possibility that he has not. The chances are that he will fight, and he might fool everybody and get well. If you don't lie, you will avoid much worry."

"But the practice of medicine looks like a hopeless sort of proposition when a fellow faces so many years of study and drudgery. I like it in some ways, but I'm not sure whether I like it enough." Tom Branch lit a cigaret and stared thoughtfully into the fire. His father smiled.

"If you told a 5 year old child how much grief and tribulation he would have to go through in life before he amounted to anything, do you think he would care to grow up? Assuredly not. Your ability to meet situations comes gradually, as a result of experience. You are overwhelmed at the thought of the responsibilities of a doctor's profession because you have not yet been trained to meet them. That is why you go to medical schools and hospitals. By the time you complete your course, these insurmountable difficulties will seem smaller."

"I'm not discouraged, but you've set me thinking," the boy replied.

"Just what I wanted. I'd be a fool to paint medical practice in bright colors. I've given you the seamy side, but you know there's another side as well. I don't mean just the classic dear old family doctor of fiction with his gig and his old white horse and his mysterious bag, the dear old fellow who was beloved of all the countryside. He has gone. He did much good in the world, and he will be missed. The side of medicine that is not so seamy is the side presented by the honorable upstanding practitioner who devotes his life to the study of his cases and the welfare of his community. This man has a broad enough mentality to assimilate the best meat of every specialty and apply it in a sensible and economical way. This type of man is never content to narrow his life down to the confines of medical drudgery. He keeps his mind open and alert on many subjects outside his profession and by so doing is able to talk the same language as most of the people with whom he comes in contact. Perhaps one may think that he is tied down to his work, but on the other hand his time is far more nearly his own than if he were an executive in an office. To such a man each difficult case is a detective problem, and he studies it as such. Satisfaction comes to him when he has worked out each clue to a final focal point and apprehends the criminal, which may be a diseased tooth, a sore appendix, or a mental twist caused by domestic unrest or financial problems. Medicine has advanced rapidly in the past few years, and the importance of details formerly thought insignificant is well recognized. The physician's life is a series of experiences that would make a wonderful book. Yes, it is a fascinating profession."

"But you were objecting a few moments ago to the fact that the profession had run more to scientific investigation than to actual treatment," Tom Branch interposed. "Yet you are most decidedly laying emphasis on the interesting features of diagnostic work."

"Right you are, son. You have me there. I am like most enthusiastic practitioners who are carried away with their desire to make a diagnosis. What I really need in my own work is some one to supplement my experience with practical application of new procedures. The profession is just beginning to recognize the value of a great number of methods of treatment that were ignored a few years ago. Some procedures, such as cupping, blistering, bleeding and the like, have been revived to a large degree. Massage is growing steadily in vogue, while baths of all sorts and occupational therapy are just beginning to come into their own after many years of neglect. We may have missed or mislaid some important remedies that might be of incalculable value to patients today. In the search for something novel and bizarre we often lose sight of the value of the old. I should like to see a young man study medicine who would keep his feet on the ground and not be drawn too far away from fundamentals. He would have a magnificent opportunity for success."

"But don't you think there is a lot of bunk handed out by doctors, Dad? I have run into some of them at times up in the mountains. They look wise and give you a few pills and call in the next patient. Some of these old birds don't know as much as I do."

"That is perfectly true. How some men can dare to practice medicine among intelligent people is beyond my comprehension. They are the ones who bring discredit on the profession because they are slovenly of mind and body and are simply trading on the diplomas they hold to get a living. Many of them are grossly ignorant to begin with and, by associating with and practicing among ignorant people, they have let their minds stagnate hopelessly. Some of them, however, have become *(Continued on page 754)*

"Egg Free"

By

Gertrude T. Spitz

Other foods, containing the same food values as eggs, may be substituted if the child's diet must be egg free.

H. Armstrong Roberts.

"BUT WHAT can I give him for dessert if I can't use eggs? And what can he have for supper? He always has an egg."

After her visit to the physician in charge of anaphylactic cases, the indignant mother veritably bombarded me with these queries. She had been referred to my food clinic for an elimination diet and was beside herself with the restrictions on her small son's eating habits.

I calmed her as best I could while I inquired about Herbert's daily routine and meals. Then I gave her some advice and some recipes. Because there may be many mothers with the same problem, I am going to tell HYGEIA readers what I told her.

"First of all, Mrs. Kelvin, little children do not have to have eggs in their diet if they have enough other foods that give them the same food values that are present in an egg. Eggs are eaten for the iron, the protein and the fat that they contain. Protein makes muscle and builds tissue and helps children to grow. Any child who has a quart of milk a day, meat occasionally, fish once or twice a week and a little cheese gets sufficient protein food. Milk, meat, fish, eggs and cheese are the best protein foods, and with the exception of milk, one can be used more or less in place of the other. Milk also has fat in it just as does the egg; if one needs additional fat, one can have it in the form of butter. The iron in the egg must also be considered. Milk has little of this, but if Herbert gets whole grain cereals, whole grain breads, such as whole wheat, rye or oatmeal bread, and plenty of green vegetables, as well as meat occasionally, there is no need to worry about the iron, for these foods all contain iron.

"Vitamins, the other food substance that egg contains, are also present in other foods. Vitamin A is found in egg yolk, but it is also found in butter and in milk. Vitamin D, which is in egg, is in milk and butter; and during the summer months when there is sunshine, this vitamin is obtained from the sun. In the winter, cod liver oil is often used to furnish this vitamin. Thus you see, Mrs. Kelvin, the substances furnished by the egg are also present in other foods, and Herbert can get along nutritionally without the egg. If he had to give up milk, as many children do, it would be much harder to find a substitute because it is difficult to have enough calcium for the proper formation of bone and teeth in a diet without milk.

"What to give him in place of egg for his supper meal is simply a question of menu planning. Excellent supper dishes for young children are creamed vegetables on toast, or creamed vegetable soup, such as tomato bisque, cream of pea or cream of celery soup. In order to make the soup more attractive, it is well to strain the vegetables, but for a change they can be cut in cubes or slices, added to a thicker milk sauce and served on toast. Occasionally, you might add a little grated cheese to the white sauce; this would change the flavor and increase the protein and fat. Crisp bacon could be served as a garnish with the plain creamed vegetable on toast; or bacon with lettuce, bread and butter, and stewed fruit would make a good supper. If it is a warm night, chopped raw carrot or cabbage between slices of buttered dark bread

with fruit and a glass of milk would be a satisfactory meal. These vegetables and the dark bread would furnish as much iron as the egg. If the fruits served are dried dates, prunes or apricots, they would also increase the iron in the diet. Even a cold cereal with fresh berries and milk at night, plus dark bread and butter or raisin bread, would be a good supper for a 5 year old.

"You say you are bothered about dessert, for unless you can give Herbert custard and cake you do not know what to feed him. Hot-water gingerbread is an excellent substitute for cake. This recipe serves nine:

GINGERBREAD

Soda	1 teaspoonful
Ginger	1½ teaspoonfuls
Salt	½ teaspoonful
Flour	2¼ cupfuls
Boiling water	½ cupful
Molasses	1 cupful
Fat	4 tablespoonfuls

Sift together the soda, ginger, salt and flour. Add the boiling water to the molasses. Add the sifted soda, ginger, salt and flour. Mix well. Add the melted fat and mix well. Bake in a shallow greased pan for 25 minutes.

"For a special treat you might try molasses cookies. They, too, are made without eggs:

MOLASSES COOKIES

Butter substitute or fat	2 tablespoonfuls
Sugar	¼ cupful
Molasses	½ cupful
Flour	2 cupfuls
Soda	¼ teaspoonful
Ginger	½ teaspoonful

Cream the fat and add the sugar. Heat the molasses and add it to the mixture. Sift the soda and ginger with ½ cupful of flour, adding it to the mixture; add enough more flour to make a dough. Roll on a floured board, cut and bake in a floured greased tin for 10 minutes.

"There is also an applesauce cake made without eggs, which was used to a great extent during the war:

APPLESAUCE CAKE

Sugar	1 cupful
Shortening	½ cupful
Salt	¼ teaspoonful
Clove	½ teaspoonful
Cinnamon	1 teaspoonful
Raisins	1 cupful
Applesauce	1 cupful
Soda	1 teaspoonful
Flour	1¾ cupfuls
Nutmeg	

Cream the sugar and shortening. Add salt, spices and raisins. Dissolve the soda in a little warm water. Then stir it into 1 cupful sour applesauce, letting it foam over the ingredients in the mixing bowl. Beat all thoroughly and add the flour. Bake it in a loaf tin for 45 minutes.

"In place of custard you can make junket. It comes now colored and flavored so that you can vary it in this way.

"There is fruit jelly or gelatin dessert to have occasionally, and even prune jelly served with cream is a splendid ending to the meal. The recipes that I shall give you will serve six, with the exception of the cornstarch pudding, which serves five.

PRUNE JELLY

Prunes	⅝ cupful
Gelatin	2 tablespoonfuls
Sugar	1 cupful
Lemon juice	¼ cupful
Water	

Wash the prunes and soak them overnight in cold water. Boil them in the same water until they are tender. Soak the gelatin in ½ cupful of cold water for 15 minutes. Stone the prunes and cut them into small pieces. Add enough boiling water to the prune water to make 2 cupfuls. Pour this over the soaked gelatin. Add sugar and lemon juice. Add the cut prunes. Pour the mixture into a wet dish; allow it to cool and stand until firm. Serve with cream or top milk.

"Tapioca pudding can be made with water in place of milk, particularly if grated pineapple, canned peaches or sections of apple are added.

FRUIT TAPIOCA

Pearl tapioca	⅔ cupful
Sugar	¾ cupful
Salt	½ teaspoonful
Hot water	4 cupfuls
Lemon juice	1 tablespoonful
Fruit	1 cupful
Grated pineapple or apple sauce or canned peaches.	

Wash the tapioca and soak it for an hour. Add boiling water and salt. Cook the mixture over hot water till the tapioca is transparent. Pare and quarter apples; add sugar and lemon. Cover the mixture with cooked tapioca. Bake in a moderate oven till the apples are soft. Serve either hot or cold. Dried fruit may be used if it is well soaked first, and peaches may be substituted for the apples. Minute tapioca can be used.

"There is a recipe, too, for cornstarch pudding made with milk and without eggs:

CORNSTARCH PUDDING

Cornstarch	4 tablespoonfuls
Sugar	6 tablespoonfuls
Salt	¼ teaspoonful
Milk	2½ cupfuls
Vanilla	½ teaspoonful

Mix the cornstarch, sugar and salt together. Add ½ cupful of milk and mix until it is smooth. Heat the rest of the milk over hot water. Add to the cornstarch mixture. Cook it over hot water until thick, stirring all the time. Cover and cook for 25 minutes. Add the vanilla. Cool. Serve with milk, sliced fruit or fruit juice sauces.

"Apple Betty served cold is a nice hot-weather dish:

APPLE BETTY

Bread crumbs	2¼ cupfuls
Butter	1½ tablespoonfuls
Apples	7 large
Sugar	4 tablespoonfuls
Milk	¾ cupful
Cinnamon	½ teaspoonful

Grease a pudding dish. Cover the bottom with bread crumbs. Put in a layer of sliced peeled apples. Sprinkle with sugar and cinnamon. Add another layer of crumbs. Add a layer of apples until the dish is full. Pour enough milk on to moisten the pudding. Put a layer of crumbs on top. Dot the top with butter. Cover and bake until the apples are tender (about 30 minutes). Uncover and brown the crumbs. Other fruits may be substituted for apples.

"Rice pudding, prepared by washing ⅓ cupful of rice and putting it in a greased pudding dish with 4 cupfuls of milk, ½ cupful of sugar, and ½ teaspoonful of salt, mixing it well, and letting it stand for half an hour and then baking in a slow oven for three hours, stirring occasionally, can replace rice pudding made with eggs.

"Another summer dish is hot stewed raspberries, strawberries or blueberries sweetened with a little sugar and lemon juice, poured over slices of bread in a pudding dish and chilled.

"Sherbet made with milk or water will do for special occasions, and homemade ice cream without eggs will also provide a treat. If you have an electric refrigerator this is a simple matter, but if you only want to make a small portion and have no freezer, whip ½ cupful of cream sweetened with 1 spoonful of sugar, add ½ cupful of mashed banana, strawberries or raspberries and put in a baking powder tin. Cover with wax paper before putting on the tin cover. Place the tin in a bowl or pail of chopped ice and rock salt; stir the mixture occasionally; at the end of an hour or so, you will have a fruit mousse which will compare favorably with the best French ice cream."

BRIEF HEALTHGRAMS ✣ from Articles in This Issue

¶To the devoted medical practitioner, each difficult case is a detective problem, and he works out each clue to a final focal point to detect his "criminal." *See page 697*

¶Swimming, walking and playing tennis will strengthen the muscles necessary to the maintenance of correct posture. *See page 711*

¶Although ambition, fantasy and imagination are invaluable tools to human progress, they must be kept within the bounds of reality and contribute to concrete performance within the capacity of the individual. *See page 708*

¶If the child's diet must be "egg free," other foods may be substituted that give him the same food values found in eggs. *See page 701*

¶By strict dog regulations, Denmark, Norway and Sweden have not had a case of rabies in fifty years. *See page 686*

¶Any abnormality in the positions of the teeth, jaws or their respective dental arches is referred to as malocclusion. *See page 704*

¶It saves considerable time to plan and execute a picnic menu consisting of one balanced meal which all can eat, omitting all ramifications, variations and substitutions. *See page 727*

¶Capes, sleeveless dresses and bias cutting of clothes lend themselves surprisingly well to concealing the disfiguring shapelessness of a body cast. *See page 715*

¶Vitamin D milk is a certified milk so rich in vitamin D that it can cure and prevent rickets in young infants. *See page 694*

¶Let us walk humbly in the presence of the cold and admit that present knowledge does not justify great boasting. Until we learn more, we are justified in avoiding chilling, especially wet chill, in enjoying fresh air without drafts, in dressing for comfort, in keeping the feet dry and in so conducting ourselves when we have colds as not to transmit them. *See page 735*

¶A fairly complete understanding of the phenomenon in lower forms of life will give the parent or teacher poise and resourcefulness greatly needed in teaching sex. *See page 722*

¶Crossing of the eyes results from a need for a correction of errors of refraction in one eye or in both eyes by the use of glasses. A weak eye may become lazy and actually lose some of its ability; thus it turns in or out. *See page 692*

¶When the 6 year old child starts for school he is due for a real check-up, not an ordinary legalized school inspection but a more detailed examination by a medical observer of experience, under conditions permitting the removal of the child's clothing. *See page 716*

¶It is absolutely necessary for the person with diabetes to use his needle. Insulin is not a drug; it is, rather, a substance that acts on the blood sugar as the spark acts on the gasoline in an automobile. *See page 688*

¶So neglected is the field of voice dynamics by the ear, nose and throat specialist that the play has been taken entirely out of the hands of the specialist, and numerous teachers have come into existence with all kinds of fantastic theories which do not comport to the laws of physiology or physics. *See page 731*

¶To consider a man's development finished when he has reached the early twenties is to stop far short of the real span of usefulness. The man of 40 should look forward eagerly to the remainder of his life. *See page 684*

The Effect of Teeth

MALOCCLUSION is a dental term which refers to any abnormality in the positions of the teeth, jaws or their respective dental arches. It refers to the "rabbit-faced" individual whose upper teeth and gums are so prominent as to hang far out over the lower jaw; to the "chisel-chin" type whose protruding lower jaw gives a pugnacious appearance; to the chinless or "Andy Gump" type whose ailment is a much underdeveloped lower jaw, and to the person whose upper jaw may be underdeveloped. The individual who displays his entire gums when he smiles and the person who does not even show his teeth when he smiles also afford examples of malocclusion.

Occlusion refers to the normal relation of the teeth when the jaws are closed and at rest. Normally the upper teeth overlap the lower and interlock with them in a specific manner. In their functions the teeth may be compared to gears. The teeth of two gears mesh or interlock so that the movement of one involves the movement of the other. If one of the teeth of the gears is broken, it will lead to a breaking up of the entire mechanism. The same applies to the mouth and its contents. If one tooth is extracted, the others must assume its duties. The result is a shifting or movement of the teeth to accommodate themselves to the changes and the eventual destruction of the entire dental mechanism.

The child may have malocclusion caused by premature loss of temporary teeth. If, for instance, the temporary first molar is extracted at an early age, the temporary second molar will have a tendency to drift forward to close, to a certain extent, the space that is required for the eruption of the permanent tooth. Thus a crowded condition will result and perhaps throw both dental arches out of their normal alinement.

When such a tooth is extracted, the dentist makes some provision to retain and preserve the space. This is a grave responsibility and should never be neglected. Neglect in providing for this condition at the right time may change the entire life of the individual. The deformity often causes social ostracism and mental and physical anguish which would never have been encountered if the child's facial expression had developed normally.

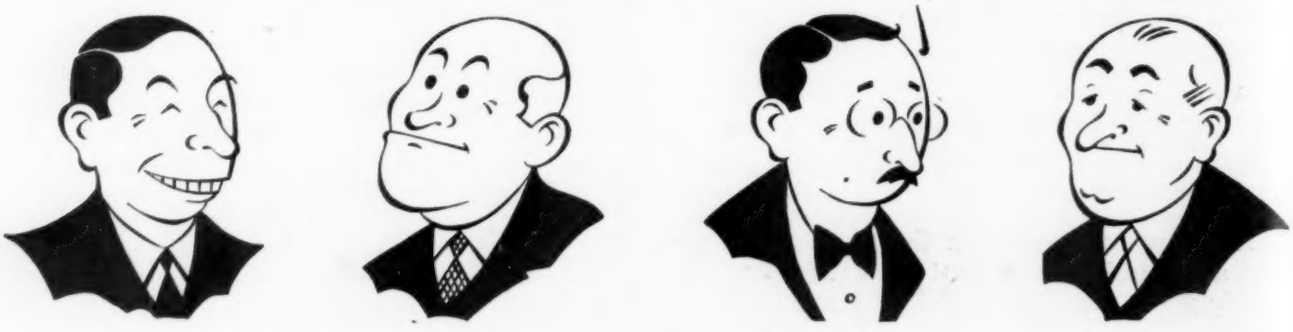
Premature extraction of any temporary tooth, causing a change in the positions of the remaining teeth, may force eruption of the permanent teeth into abnormal positions. Drifting may take place, and spaces may become narrower than necessary for the eruption and accommodation of permanent teeth. If the 6 year, the first, molar is permitted to drift forward, malocclusion is produced. The results may be serious enough to require operations for removing impacted teeth, and the correction of malocclusion may become extremely difficult.

Retaining temporary teeth too long may likewise cause abnormal relationship in the dental arches. The permanent teeth will take the direction of least resistance and erupt either in front of or behind the temporary teeth. This accounts for the layman's expression, "He has a double row of teeth."

Other conditions of the mouth may create malocclusion. Any continuous pressure, however mild, is sufficient to produce it. An enlarged tongue, for example, would naturally carry the lower teeth and arch forward and outward. Enlarged tonsils may also be a causative factor. Keeping the mouth open and the chin forward may cause the jaw to develop in that direction.

One of the principal causes of malocclusion is mouth breathing. Nasal obstructions create a muscular pressure in the nasal region, preventing the full and proper development of the nasal bones and a constriction of the upper dental arch. Mouth breathing may cause either a protruded or retruded upper arch in the region of the front teeth. The harmonious relation between the floor of the nose, the roof of the mouth, the expression, the voice and the speech may thus be completely altered.

Mouth breathing may frequently be only a habit. To correct a case of malocclusion caused



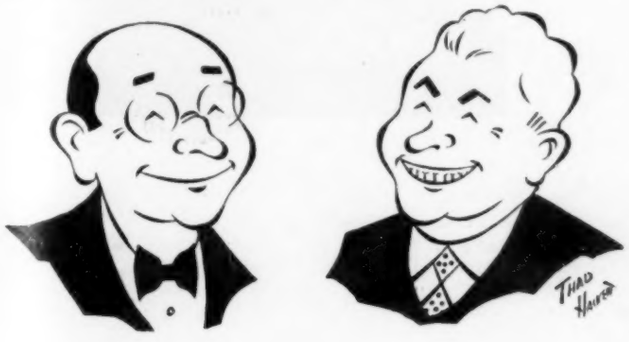
on Facial Expression

by mouth breathing, the nasal obstruction or the habit must first be cured, or a relapse may occur.

There are other habits which will cause malocclusion. The use of pacifiers may result in a protruded section in the upper arch, with a compensating retrusion in the lower jaw. Thumb and finger sucking may produce the same results, and usually the orthodontist, the specialist for correcting these conditions, can recognize the condition so well that he can tell the parent which finger or thumb of the right or left hand was used! Muscular habits of twitching or pressure on any section of the dental arches may also produce abnormalities. Sleeping with the fist under the side of the face may cause such a condition in a child. Keeping the lower lip under the upper teeth is a habit found among many children. This will cause the lip to enlarge from the continuous irritation. The upper teeth will protrude extensively, whereas the lowers may retrude to a similar extent.

In recent years, malocclusion has become a prominent issue and is more observed by the profession than ever before. Since more and more attention is now being focused on beauty and appearance, malformed mouths are now receiving more consideration. The public seems to be interested from the point of view of beauty rather than from that of health.

Tooth movement can best be accomplished at a young age. The younger the patient is, the more dependable and rapid are the results obtained. As the individual grows older, the bone becomes much denser. Therefore it becomes more difficult to coerce teeth into movement, and it is more difficult to make them remain in their new positions. In moving a tooth, the bone in the direction in which the movement is to be made must be absorbed to permit the space for movement. If this procedure is done rapidly, bone may not be formed behind to replace the area from which the tooth moved, and the tooth will quickly drift back to its previous position.



By ROBERT H. BROTMAN

Various appliances have been created for the alinement of teeth. The crude appliances of former years were cumbersome and annoying to wear. They consisted of those made with jackscrews for pushing or reversed threads for pulling. Tombs have revealed the fact that 2,500 years ago appliances were constructed. The more recent appliances are light and small; they are made of noble metals for cleanliness and are comfortable to wear. Children at the age of 4 or 5 years can now wear appliances and make no complaint of discomfort or annoyance.

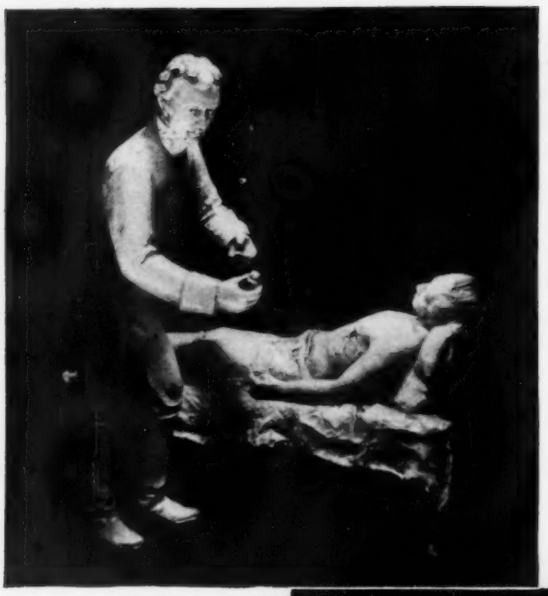
Former appliances for accomplishing certain movement were conspicuous. Today, most appliances are made almost invisible. Fine wire springs, rubber bands and ligatures are used to obtain a mild and continuous pressure in the desired direction. The force cannot be too severe, if the teeth are to remain where they are finally placed. The bone surrounding the teeth must be sufficiently dense and permanent to retain them in the position finally established.

The length of time required to treat a case varies with the history of the case, and the time at which the case is begun is the most important factor. As previously mentioned, the child is the best subject, and the earlier the treatment is begun the more certain is correction. The average length of treatment would be difficult to ascertain, but the time usually ranges from one to four years; sometimes it is much longer, but it seldom is much less.

Malformed dental arches may result indirectly in backwardness and even in feeblemindedness. As previously stated, when a child is a mouth breather the pressures produced may cause malocclusion. The improper development of the jaws and the almost gaping mouth give the impression of lack of mentality. Thus the child is shunned by playmates. The condition often becomes so noticeable that the child becomes conscious of it and seeks for his playmates children who are younger and less developed than he is. This usually results in an underdeveloped mentality and backwardness in association with people. It is true that skull deformities may create malocclusion and feeblemindedness, but it is also true that poor mentality may result from malocclusion with an otherwise normal skull, owing to the circumstances already described. It can be seen therefore that the prevention and correction of malocclusion are grave responsibilities; if they are neglected, the entire life of the afflicted person may be ruined.

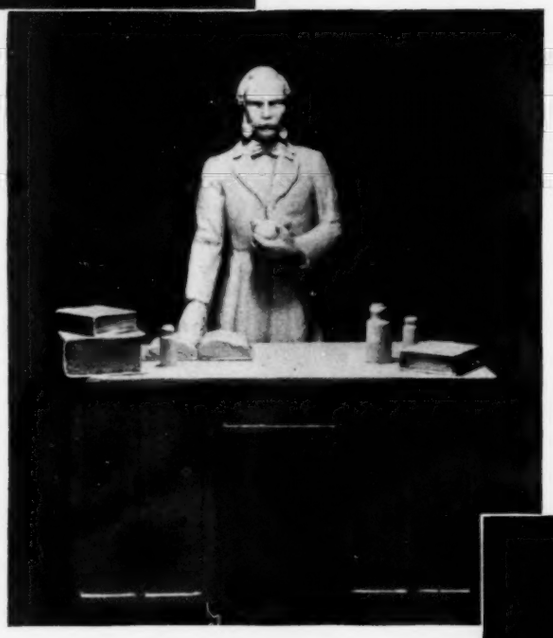
EXHIBITS of the AMERICAN MEDICAL ASSOCIATION

Modeled figures of medical leaders in small niches against a dark background tell the story of A Century of Progress in Medicine.



PHYSIOLOGY

William Beaumont a century ago investigated the process of digestion. Most of our knowledge on this subject dates from 1833.

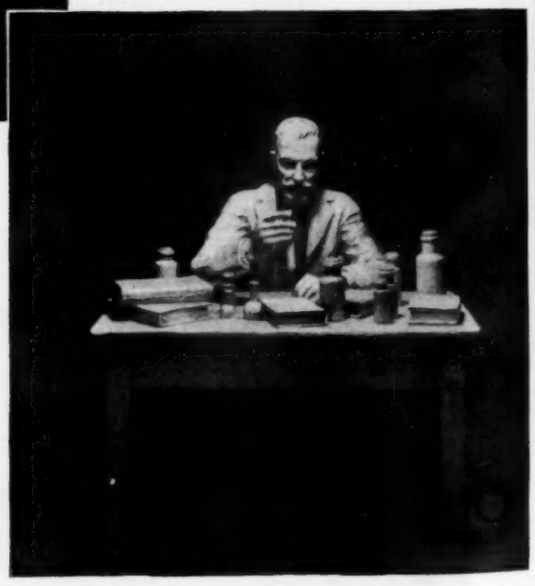


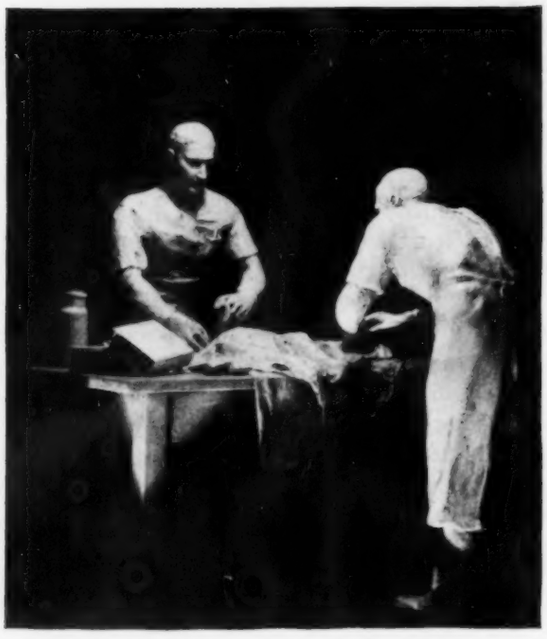
ANESTHESIA

In 1846 William Morton introduced ether anesthesia to the medical profession. It has increased the popularity of surgery and has allowed the surgeon to do better work because the time element has been extended.

ARSPHENAMINE

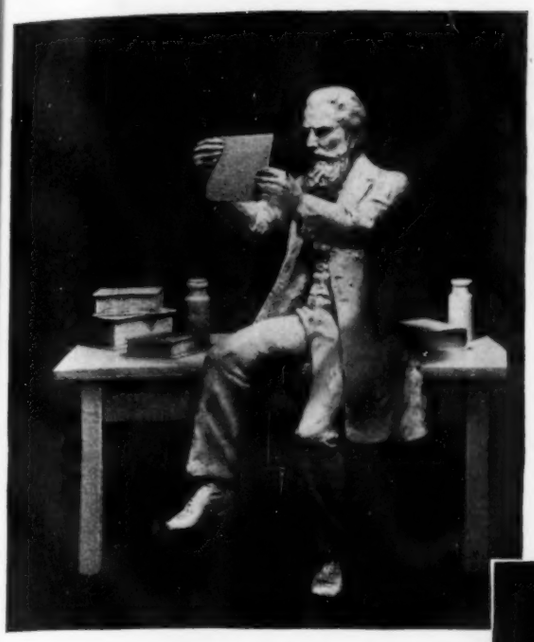
In 1909 Paul Ehrlich discovered a chemical compound now called arsphenamine, which is a specific cure for syphilis.





INSULIN

The discovery of insulin by Frederick G. Banting in 1922 has provided a specific remedy for diabetes.

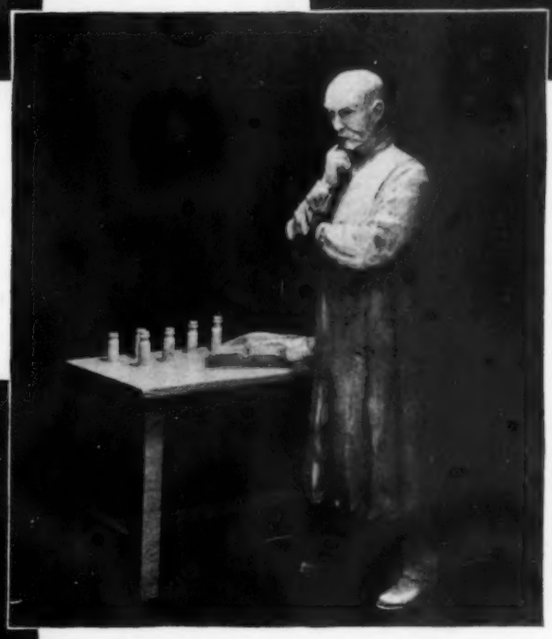


ROENTGEN RAYS

Wilhelm Konrad Roentgen in 1893 discovered the x-rays, which have made it possible to see not only broken bones but improperly functioning organs within the body. The x-rays are also used in the treatment of certain diseases.

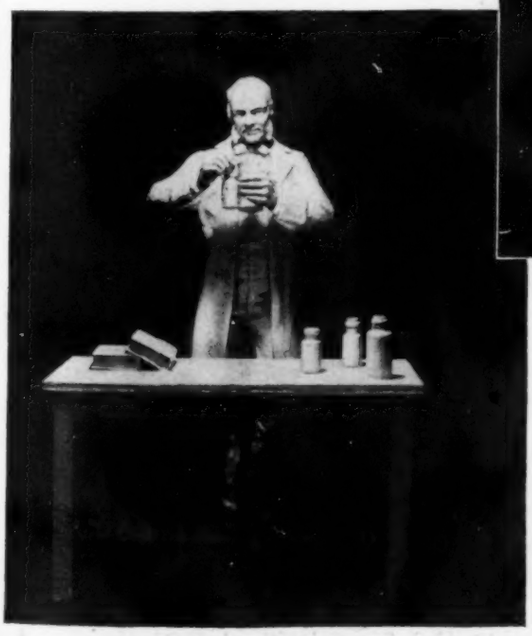
RADIUM

In 1898 Madame Marie Curie and her husband, Pierre Curie, discovered radium, a most precious substance. When properly handled, radium is useful in treating certain types of cancer.



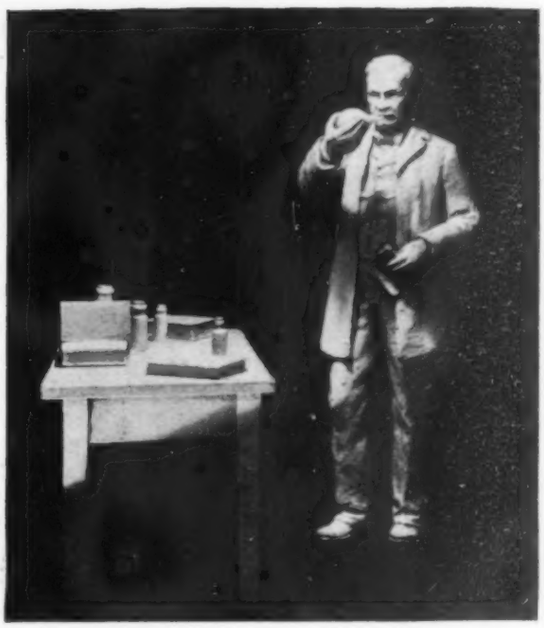
TRANSMISSION OF DISEASE BY INSECTS

In 1893 Theobald Smith observed that disease was transmitted by insects. This knowledge was later applied in the control of malaria, yellow fever and numerous other diseases.



ASEPTIC SURGERY

Lord Lister introduced aseptic surgery to the world in 1867. Infection following surgical operations has largely ceased since the adoption of scrupulous cleanliness.



BACTERIOLOGY

The "germ theory" of disease was originated by Louis Pasteur in 1861 on the publication of his first article on bacteria. Rapid strides have since been made by numerous other bacteriologists.

PREVENTIVE PSYCHIATRY

The Art of Living Wisely and Well

By

FREDERICK L. PATRY

Be willing to face the facts of reality squarely and frankly. Procrastination and evasion pave the way to unhealthy fantasy and imaginative life and to ineffective social relationships.

MANY persons, including a goodly number of the so-called intelligentsia, are still at sea with respect to the core, the cardinal principles and particularly the methodology of mental hygiene. Because of this all-too-frequent reaction on the part of leaders in health and education, I have undertaken to state briefly and concisely what I believe is the sum and substance of preventive psychiatry or mental hygiene.

The pabulum or soil on which mental hygiene feeds is the health, happiness, efficiency and social adaptation of the individual and groups of individuals.

Like all living processes, growth and adaptation in mental hygiene are genetic-dynamic processes which are ever modifying in response to internal and external conditions of a cumulative nature. The character and quality of growth depends on many factors which are frequently not obvious to the untrained worker. Growth in mental health is indeed a complex process. It takes root in the hereditary endowment and increases its form and quality of functioning through adaptation and reaction to life experiences from birth to death.

Successes and failures in life, measured in terms of health, happiness, efficiency and social adaptation, depend largely on the nicety of balance which one is able to maintain more or less constantly in view of the strength and quality of integration of the factors entering therein. Chief among these are (1) the stuff out of which one is made (hereditary or constitutional endowment), (2) the environment surrounding that stuff (home, school, church and community), (3) the type and quality of habit patterns woven into the warp and woof of the person's life fabric (including due respect for the expression of instinctive and emotional action tendencies and for emotional and temperamental education as well as education of the more recently acquired intellect) and (4) the type and character of choice and decision reactions (calculated or impulsive, clear-cut or vacillating, mature or infantile).

In the light of these four factors it is clear that mental health in its broadest sense has come to mean the measure of a person's ability to adjust to life as he has to face it, with a reasonable amount of satisfaction, success, efficiency and happiness. This ability implies a personality which is so well integrated that it is able to stand the stress and strain of life and its vicissitudes, is able to capitalize the opportunities presented, and is able so to live as to command social approval.

How may such a goal be reached? What are the essential principles of mental hygiene that must be cultivated?

Since "the only way in which we are all alike is that we are all different," it should be obvious that no rule-of-thumb or cut-and-dried formula can be prescribed. The optimum of mental health is not achieved by reading over a list of principles, or is it to be attained with such relative simplicity as the application of cosmetics. Growth and the time-bound factors with which I am now dealing can be of telling value only if they are woven into everyday habits of thinking, feeling and doing.

The following guide-posts are erected to assist the reader in realizing the foregoing desiderata in mental health:

1. Since mind and body cannot be separated but are integrated so that each person reacts as a total unit, it behooves each of us to keep his body in optimal health. We are only beginning to realize that it is "penny-wise" economy to wait until illness overtakes us instead of preventing it by making its early recognition possible. Thus periodic medical and dental examinations have become the rule with the more enlightened citizens.

2. It is becoming increasingly apparent that man lives more by emotional-instinctive cravings than by critical reflection or ethical suasion. Thus it should be our concern to see that our emotional life is running on an even keel, that pleasant affective situations are created and maintained rather than unpleasant ones, and that a buoyant spirit of meliorism is the ruling feeling-attitude. Do not become disgruntled because you cannot be the best or have the most, but rather be satisfied with doing a little better day by day. Perfection is something to be striven after rather than to be obtained.

3. Seek to recognize early factors of stress and strain affecting your adjustment to life, whether they are internal, such as physical drains or malfunctionings or mental conflicts, or external, such as unwholesome living and working conditions, unnecessary noise or unpleasant social relationships. A varying amount of friction and strain in modern civilization is relatively unmodifiable and must be accepted. But it is the unnecessary drip, drip, drip that eventually wears on the balancing powers and often paves the way for ill health.

4. Be willing to face the facts of reality squarely and frankly. Live in the here and now, attending to the problems and opportunities as they arise. Procrastination, evasion and the smoothing over of situations that demand a direct approach pave the way to unhealthy fantasy and imaginative life and to ineffective social relationships.

5. Cultivate a well balanced program of work, play, relaxation and sleep. Man is essentially an individual who lives by habit. Habits in turn are motivated by the emotional-instinctive life, cravings, longings and desires. Without sound habit patterns of work, play and sleep, one not only interferes with essential biologic rhythms but opens oneself to possibilities of mismanagement, side-tracking from important goals or purposes, inefficiency and unnecessary conflicts.

6. Although ambition, fantasy and imagination are invaluable tools to human progress, they must be kept within the bounds of reality and contribute to concrete performance that is within the capacity of the individual. In these days of unparalleled opportunities for advancement in professional or commercial life, it is highly important that each person recognizes his capacities and capabilities and keeps his ambitions closely in touch with what he can do reasonably well, with a feeling of satisfaction. Unfortunate mental states are frequently brought about by misguided though well meaning individuals or their advisers, who goad persons on toward goals they can never reach because of lack of inherent capacity, aptitude or interest.

7. Develop what Adolf Meyer calls "resting points of satisfaction" and periods for "constructive composure." Be willing to relax after putting forth your best efforts and thus give yourself opportunities to prepare adequately for the next period of endeavor. The present

We are only beginning to realize that it is "penny-wise" economy to await until illness overtakes us instead of preventing it by making its early recognition possible.

tendencies toward hustle and bustle, eternal competition and high pressure standards of activity, which have been referred to as Americanitis, make ineffectual our aim, waste our energy and accomplish less than what might be obtained by reflective periods of composure, which bring satisfaction with reasonable accomplishment. The critical evaluation and use of the time factor should be an important desideratum in any program of mental hygiene.

8. We are inherently social beings who exist happily and progressively only so far as the welfare of the group is maintained. Therefore we must learn to forego selfish desires or immediate forms of gratification whenever the present or ulterior welfare of the group is concerned. Let us embrace Meyer's favorite phrase, "freedom and solidarity"; that is, individual and social responsibility with faith in melioristic attitudes. Free will, in the sense of the older writers, had best be modified. Freedom of expression is not chaos; it implies responsibility to the group interests and social welfare. An individual can contribute to this end by becoming a voluntarist who works in the conviction of the value of effort and self determination.

9. Whenever you are in doubt concerning choice and decision in important matters, veer to the side of safety by seeking the consensus of your best judges and friends. Such group objective check-ups with reality are highly desirable, since they often bring to bear on nebulous situations new light and a change in opinion which benefits all concerned.

10. Cherish and cultivate a wholesome sense of humor. It will give buoyancy to many an otherwise trying situation.

11. Make a sincere effort to know yourself better, as well as to understand those with whom you live intimately; be willing to accept yourself, shortcomings and liabilities as well as assets; be yourself and improve yourself.

12. With all our modern devices, technics and advantages of civilization, we are apt to forget that we shall never be able to dispense with critical and trained common sense. It is just as potentially dangerous to possess the quintessence of common sense without training in the art of living happily, healthfully and efficiently together, as it is to have the maximum training without common sense. Let us treasure and utilize to a greater degree this human capability.

SCHOOLS

—OF YESTERDAY
—OF TODAY
—OF TOMORROW

Will Be Featured in the September Hygeia

"Now when I went to school, we didn't have all this foolishness, and we learned something," blusters the carping critic. And in reply, *William Arlis Richards,* championing the cause of modern education, turns the hands of time backward to consider the school of yesterday and to compare conditions then and now.

Mary C. Brown gives delightful suggestions for attractive school lunches. "What Your Child Eats at Noon" includes a discussion of school cafeteria lunches and of lunches packed at home, and gives many a valuable hint for harassed housewives.

"Are They Ready for School?" asks *Beulah France, R.N.* Her question embraces not only the prospective pupils but their parents as well, for "parents, too, must go on trial at the opening of school. . . . 'The world moves forward on the feet of little children,' and it is for you, the parents, to guide those little feet."

"Twenty-five million strong, the children of America are returning to school. By June half a million will have been injured, and 7,000 will have died of their injuries." Startling? Yes! Exaggerated? No! One may well give sober consideration to the facts set forth by *Curtis Billings* of the National Safety Council in his article, "Can School Days Be Safe Days?"

Realizing the vital need for a first physiology that shall be intelligible to "the youngest child in the grades," *Dr. Oscar Reiss,* associate professor of pediatrics, University of Southern California Medical School, and *Dorothy Walter Baruch, M.E.,* instructor in education, Whittier College, have collaborated in presenting to *Hygeia* readers "I Want to Know: A First Physiology."

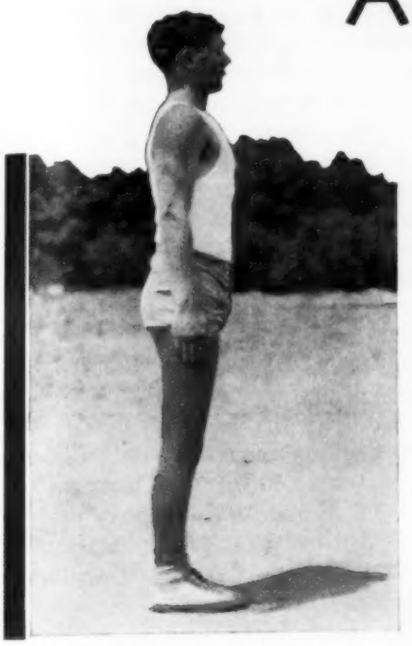
In a comment addressed to fellow parents, teachers, school boards, superintendents of education and faculties of schools for the training of teachers, Dr. A. J. Carlson, professor and chairman of the department of physiology, University of Chicago, makes the following statement:

"The welfare of society seems to demand an objective teaching of health in our public schools as well organized and as continuous throughout the school years as the teaching of the three R's. . . . The present work is a noteworthy attempt to put the elementary facts of anatomy, physiology and health in a language intelligible to the youngest child in the grades."

Carlton Palmer, professor of physical education, University of Alabama, considers the problems of the rural school and finds several interesting solutions.

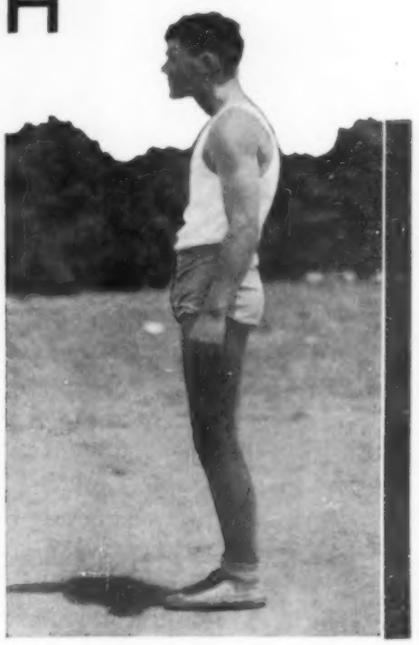
With a keen insight into the problems involved, *Regina Woody* discusses "The Mother and the School" and encourages a cooperative and understanding attitude.

TRAINING FOR ATHLETICS AND HEALTH



By

ALFRED E. PARKER



Good posture— or poor?

CHAPTER VIII

Correcting Physical Defects

DICK WARD was the best shot on the basketball squad during his first and second years in high school. By the middle of the third year, however, something had happened to Dick. His eye seemed unable to find the basket. The truth is that a mental disease, called Big Head, had taken possession of him. The coach, noticing this, was compelled to bench Dick during a number of games.

Kept out of the games, Dick would slump on the bench and sulk; and if the coach did happen to put him in a game for a few minutes, his playing was erratic; he never seemed able to find the basket. By the close of the third season this boy, who had formerly been called Dead-Eye Dick, walked about school with his head down, apparently reveling in his dejected mood.

This attitude of sulking like a small child had more than one effect on Dick. He was unable to sleep at night; dark rings showed under his eyes; he had no appetite; as he walked, his shoulders, which had once been so straight, were bent like those of a tottering man in advanced senility.

Unknown to himself, Dick was harboring a mental attitude which was affecting his entire body, causing him to be ill when he might just as well have been healthy and vigorous. But most noticeable of all was the result this mental attitude was having on his physical posture. Had Dick but known the results of bad posture, he might have changed his ways. He was in such great mental turmoil, however, that to have spoken to him about posture would have been useless.

Fortunately, only a few boys get into such a mental rut as did Dick. Nevertheless, there are many who through carelessness allow themselves to acquire a bodily defect which in time results in other disturbances. Chief among the bodily defects which can in most cases be avoided and probably corrected is that of poor posture.

Because poor posture throws the body out of alinement, the organs cannot function properly. Shoulders that are stooped cause the chest to be flattened, cramping the lungs; and a drooping head strains the muscles of the back of the neck and the shoulders. When the body slumps forward at the hips, the organs in the abdominal cavity are placed in an abnormal position.

While it is true that some boys have a faulty posture because of a malformed skeleton or because of defective bones or ligaments, most boys can prevent poor posture. And in the majority of cases, too, once you have poor posture, correction for the defect can be had by consulting a competent physician. Your duty to yourself now is to learn what causes poor posture.

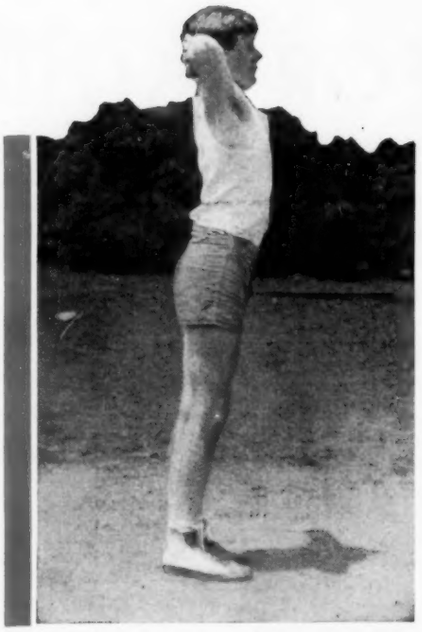
First of all, poorly developed muscles make it hard to maintain correct posture. An unbalanced diet may also interfere with the development of the bones and with normal growth which, eventually, will affect the carriage of the body. Certain abnormalities such as enlargement of the adenoids, causing difficult breathing, may result in poor posture; flat feet, causing fatigue and backache, may lead to improper posture. Probably the most common

cause of all, however, is a wrong method of standing or sitting.

Sitting and standing correctly are matters which merit constant attention. Neglect of checking up on oneself even over a short period of time leads to the habit of improper sitting and standing. Acquire the habit of proper sitting and standing. At your school desk or at home sit upright rather than relaxed into a slouching position. To stand correctly, check up on your feet, which should be parallel and should point straight forward. The weight of the body must be balanced equally on the ball and heel of the foot. And, besides, the lower part of the abdomen is in the best position when drawn in, rounding slightly where it meets the ribs. In normal posture the curve of the spine is slightly forward at the neck, a trifle backward at the shoulders and forward at the waist line. Any exaggeration of these curves denotes poor posture. In good posture, the shoulders are level, the head is erect and the chin in.

It may be that you have been lax about your posture. If so, start now to sit and walk straight; and if your posture is not too far advanced, you can improve it by participating in outdoor sports and games. Swimming, walking and playing tennis will strengthen the muscles necessary to the maintenance of correct posture. Should you find that a well balanced diet and plenty of exercise, in addition to a conscious effort to sit and walk correctly, do not improve your posture, you ought to consult a competent physician. If the physician thinks best, he will prescribe special exercises, and it is better to carry out such exercises under the guidance of an expert than it is to do them unaided.

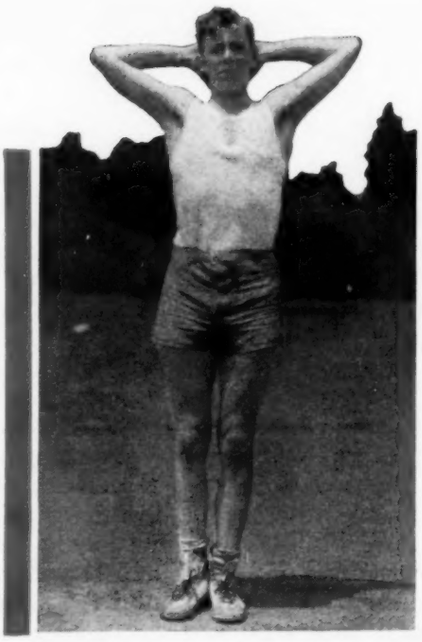
Besides postural defects, there are other bodily defects that can be corrected. There is, for example, the defect of one shoulder hanging lower than the other. This physical flaw is often the result of the continual carrying of heavy loads in one hand. Newsboys carry a heavy load on one shoulder; so do caddies carrying a heavy bag of golf clubs. Such loads, borne day after day, will cause an unequal hanging of the shoulders. Correction can be had by changing sides and carrying the weight over the shoulder that is high. The most common exercise, however, is to swing from a bar by the arm that is lower than the other, and in time the shoulders will hang equally.

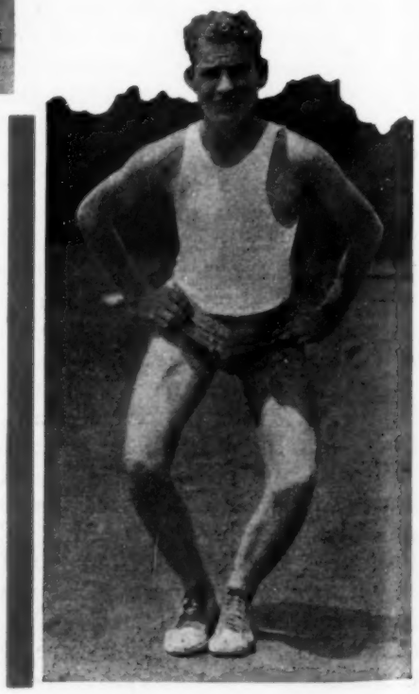


Another defect that can be benefited by patient exercising is flat foot. When the World War caused the United States government to draft men by the thousands, hundreds of these men were surprised to find that they had flat feet. Had these men known what causes flat feet, they would not have been so surprised, for flat feet are the result of wrong methods of living, such as lack of proper exercise, which leaves the muscles weakened, and poor carriage. Shoes of a wrong type also tend to limit the muscle action, causing uneven distribution of weight on the feet.

Strange as it may seem, the people of savage tribes seldom have flat feet. Going barefooted in the woods, these savages walk with their toes in, grasping the ground. An odd way to walk, it may seem, and yet the turning in of the toes strengthens the leg muscles and the muscles of the toes and the soles of the feet.

No such action of the toe muscles is permitted when





Above are shown exercises for correcting protruding neck. The arms should be pushed back as far as possible while a firm grasp is maintained on the back of the neck.

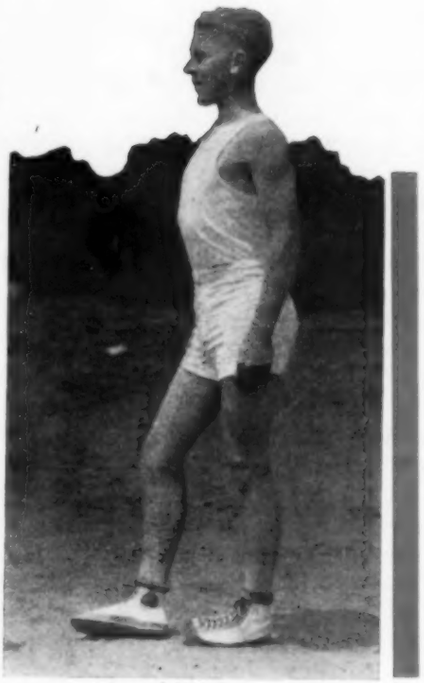
To the right is shown the starting position for the correction of knock knee. The second position is shown opposite.

tight, stiff shoes are worn, and the prevalent habit of toeing out adds to the strain on the muscles supporting the foot in walking. Overlooking these facts has caused much trouble, for an advanced case of flat feet can be extremely painful.

Luckily there are a number of exercises which will correct flat feet, especially if these exercises are begun in youth before the muscles are too set. To begin with, in your room or in the gymnasium, go barefooted and walk with the toes in as do South Sea Islanders. This method of walking is also called pigeon toed and, although it gives an awkward appearance, it is quite helpful.

Then, too, you will find help by assuming a standing position and rocking onto the outside edge of the foot. You can alternate this exercise with the one in which you rise on the toes. As you are on your toes, pull your heels in toward each other. A similar help is to be found in skipping rope, for in jumping over the rope you are compelled to keep on your toes; by so doing you strengthen the muscles that support the arch of the foot. Picking up marbles with the toes has the same effect. In striving to grasp the marbles with the toes, the foot is drawn up and in, and the supporting muscles are strengthened.

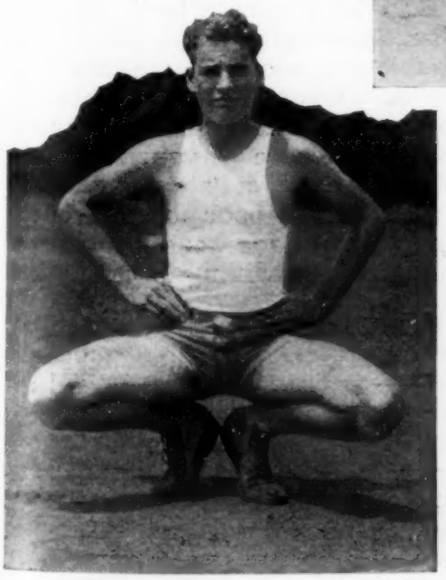
If your feet are now in good condition, you can keep them that way by paying some attention to their treatment. Always be sure to wear the right kind of shoes. Boys do not err often in the kind of shoes they wear because the "army last" shoe is quite commonly used among them. The army last shoe is one that gives the feet plenty of room, especially the toes, allowing them sufficient space in which to move. It is a shoe that has a straight inside line so that the toes can work straight; and it fits fairly close elsewhere than over the toes, including under the arch, the heel being broad enough to be stable.



Throwing the weight to the outer side of the foot in walking and standing helps to correct flat foot.

Once you have the right kind of shoes, see to it that you know how to walk properly. This will mean that you do not toe out at all, that you throw the weight toward the outer side of the foot, that you learn to use the toes to push as the foot leaves the ground and that in standing you grasp with the toes.

Some persons are knock-kneed, and this, too, is a defect of walking. Correction can be had for this by swimming the breast stroke, using the frog kick, and by squatting with the knees turned out as far as possible. In addition to improper walking, horseback riding will cause one to be knock-kneed; and if a person continues to ride, it is practically impossible to remedy this defect.



Finish of the exercise for correction of knock knee. Squat with the knees turned out as far as possible.

While not exactly a bodily defect, lack of muscle is a deficiency which causes many boys much concern. There is really nothing to be concerned about if you will but remember that muscles will increase in size and stamina with exercise. As sure as afternoon follows morning, you can increase the size of your muscles if you will put forth the effort.

Many boys want larger muscles, but they are not all willing to work for them. Just as surely as muscles increase in size with exercise, so also do muscles degenerate with lack of it. Sun worshipers in India, kneeling for hours with their arms outstretched toward the sun, in time lose all use of their arms. The muscles, held

in one position without exercise, waste away and become useless.

If your muscles are flabby and soft, lacking in size and strength, the fault in practically all instances is yours. The boy who wants strong muscles can have them by working and playing. Chopping wood, mowing lawns, garden work and other types of physical work during the summer vacation months are a few ways of building up the muscles. Work as well as play is a great builder of muscle.

Playing games affords the biggest opportunity for all boys to build muscle. In later chapters of this serial you will be told how to develop the muscles necessary to any particular athletic game, but it may be mentioned here that basketball will increase the size of the leg, arm and chest muscles; football builds the muscles of the legs and the back; baseball requires the use of more muscles than does practically any other game; and such games as tennis, passball (touch football), soccer, handball, hockey, speedball and golf all result in muscle building.

But, you say, the circumstances are not always such that you can play games. Even so, you can still build your muscles if you desire. You can purchase dumbbells or a punching bag, and exercise in your own home; or you can go through setting-up exercises which will build muscle. Most boys, however, soon become disinterested in setting-up exercises because they are mechanical. That is why games are more beneficial than mechanical exercising, for games are a joy to play, and from enjoyable exercises one derives the most muscle development. It is not the intention to contend that you cannot build muscle by setting-up exercises. You can. But will you?

When setting-up exercises become tiresome, supplement them with the following exercises:

Shadow boxing is an interesting solo performance. Assume the same stance as if you were boxing, moving around in a circle while you thrust your arms out into the air at your imaginary opponent. You will get out of shadow boxing what you put into it, but if you poke your arms into the air as vigorously as you can, you will be panting for breath and perspiring within five minutes. See to it that your legs are well apart and that you change your position rapidly. You will find that such movements strengthen your leg and stomach muscles as well as the muscles of your arms and shoulders.

To vary the exercise, try driving an imaginary bicycle while lying on your back. Take a position on the floor on your back, with both legs held in the air. You can hold this position best by placing your hands against the sides of the body for a brace. Once your legs are in a perpendicular position, go through the exact motion of pumping a bicycle.

Another home exercise is running in place or stationary running. This form of running should be nearly as beneficial as jogging on the track. It is used often by Olympic teams while traveling on ships where the space is limited. As you run in place, swing the arms violently, holding the head and chest high. Stationary running and shadow boxing are excellent activities for finishing a series of setting-up exercises, especially if you intend to take a shower-bath. It is best to take a shower whenever exercising has caused you to perspire freely.

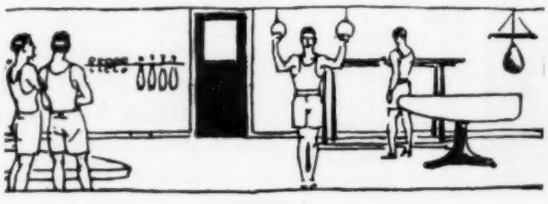
Home exercising will aid in enlarging the muscles if you spend at least fifteen minutes each day at it. Naturally, you cannot expect benefit from infrequent exercising or from movements done in a listless manner.

Besides home exercising, you can find time for hiking if you will. The boy who can never find time to go on a hike is cheating himself not only in muscle development but in the enjoyment that can be had from becoming acquainted with the outdoors. When hiking, walk briskly with the body erect, and then you can expect to get something out of a jaunt in the open.

One other activity of especial value in building muscle is swimming. The boy who has the opportunity to do frequent swimming is fortunate, for this exercise brings more muscles into use than does any other sport. For this reason a swimmer acquires an all-round bodily development. No other sport can be more highly recommended if you seek improvement in the strength of all your muscles.

Finally, if you have any kind of a bodily defect, a physical weakness preventing you from becoming a virile man, your ambition surely should be to remedy the imperfection. In a majority of cases, this can be done. Of course, you may be anemic and in a rundown condition without having any actual defect. Consult a physician, ask for a complete physical examination, and when the cause of your weakness is found, spend some real effort attaining health. Many a boy in an extremely poor physical condition has gallantly fought for health and won. How about you? Are you willing to put up the fight?

(To be continued)



"Cast" Clothes

By

Marguerite S. Hopkins

Drawings by Marg Hopkins

THE WOMAN who must wear a cast either on the body or on the limbs during a period of convalescence from bone injury is not necessarily confined to the hospital or to her home. On the contrary it may be highly desirable that she have the benefits of sunshine, exercise and change. Even work outside the home may be carried on, provided the problem of satisfactory clothing can be solved.

Such clothing should be planned so that it may be put on and off easily by the patient herself. It should make the cast as inconspicuous as possible; and at the same time, for the good of the patient's morale it should be smart and becoming. If the cast is not to be worn for a long time, the garment should be equally wearable after the cast is removed.

Certain styles and cuts lend themselves surprisingly well to concealing the disfiguring shapelessness of a body cast. The bias cut for both skirt and blouse is a life saver because it will stretch crosswise to fit, even though the cast is bumpy. When the cast is removed, the dress again follows smoothly the normal lines of the figure. Fabrics that give readily, such as silk crêpes and sheer woolens, are the most satisfactory.

No matter what the type of cast, the patient seldom has enough freedom of movement to enable her to struggle with the intricacies of sleeves. Sleeveless dresses are not only more easily put on but are also more adaptable. The lack of sleeves takes care of the need for extra width through the shoulders and around the armhole. Of course, sleeves would be impossible with an arm cast or a shoulder cast. There must be something about the shoulders, however, to soften and conceal the lines, and for this purpose a cape dress is ideal. To be an effective means of camouflage the cape should be somewhat full and fairly long, coming to the waistline in the back at least. Many of the new dresses have detachable capes that tie at the neck or shoulder with a soft bow.

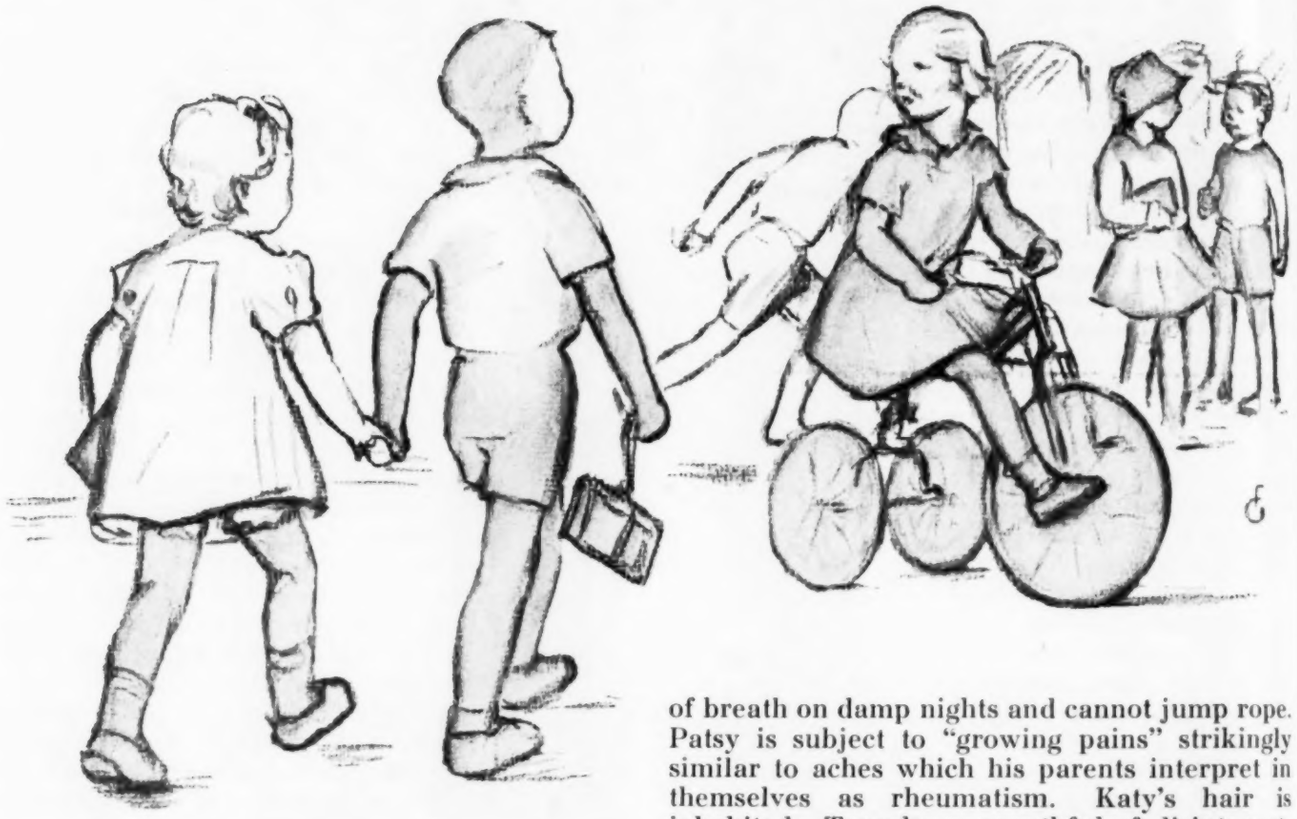
One of the charming little separate cape jackets may transform a sleeveless dress already on hand into a perfectly good "cast" ensemble. It may be made in a contrasting color, or a figured material may be combined with a plain fabric. The wrap shown in the illustration is especially good because the ties at the waist make it easily adjustable.

The problem of getting in and out of a dress readily may be solved by merely ripping a shoulder seam and the under-arm seam as far as necessary and closing with snaps. The plaid dress sketched on this page was opened in this way, leaving the cape loose from the shoulder seam and snapping it to the dress front. Belts should be adjustable, with buckles or ties.

Underwear does not present much difficulty. The knitted silk or rayon garments with elastic bands will give the necessary extra room. Silk slips cut on the bias will stretch to fit just as the dresses do. Shoulder straps snapped to the front of the garment are usually necessary.

The perfect wrap under these circumstances is obviously a cape, and the shops are full of them this season in various lengths, materials and prices. Of course, one can manage with a coat that does not fit too snugly, but a cape is far better because of the ease with which it can be put on and off and the kindness of its concealing lines.

Safeguarding the Take-Off



EARLY IN SEPTEMBER throughout the length and breadth of the United States, doors which have been closed will be opened, bells for some time silent will resound, flags which have been furled will be hoisted to the breeze, and the peace army of the nation will advance into its own special domain, the school.

In the rear ranks of this host of 22 million boys and girls between the ages of 5 and 20 years will tread approximately 2 million children under 7 years of age, representing about 40 per cent of that age and class in the entire country. This important division comprises beginners and first graders, supposedly unspoiled and expected to atone or compensate for all the defects and mistakes of their older brothers and sisters, if not for the sins of their parents.

If all the Johnnies and the Susies, the Patsies and the Katies, the Tonies and the Rosies, and the Rastuses and the Dinahs in the kindergarten and first grade could be shaken up together in Uncle Sam's hat and by some wizardry combined into a composite child, what a highly satisfactory future citizen would result! Perhaps! But let us put a little restraint on too great enthusiasm.

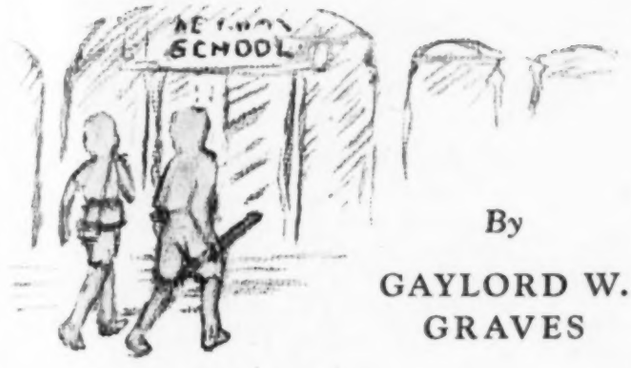
Johnny has had enlarged glands in his neck and a recurring ear discharge ever since his attack of scarlet fever last spring. Susy is short of breath on damp nights and cannot jump rope. Patsy is subject to "growing pains" strikingly similar to aches which his parents interpret in themselves as rheumatism. Katy's hair is inhabited. Tony has a mouthful of disintegrating first teeth. Rosy inconstantly looks cross-eyed. Rastus and Dinah are so bowlegged and flatfooted that they have already posed as lantern-slide subjects for observation in an orthopedic class.

Our composite child may not call for more sugar or spice, but he certainly lacks something nice.

There is probably no more neglected age period in childhood than the preschool period. Infancy is safeguarded because of its unique helplessness, and the older child when ill speaks most effectively for himself. The child of the runabout age, however, has unexplained fevers, runs through measles and whooping cough with little if any attention directed to his convalescence, wanders from a rational diet and sets his own bedtime by that of his older brother or sister without being compelled to fulfil any greater expectation of his parents than that he shall travel on his reputation for medical economy, his ability to keep on his feet being the determinate and unquestioned criterion of his welfare.

Thus, beyond all question, when the 6 year old child starts for school he is due for a real check-up, not an ordinary legalized school inspection, valuable as this may be, but a more detailed examination by a medical observer of

for School



By GAYLORD W. GRAVES

experience, under conditions permitting without annoyance the removal of the child's entire clothing.

Estimates of malnutrition are not wholly dependent on standard tables of height and weight figures. Dental defects call for diet adjustment as well as for the extraction or filling of teeth. The posture problem is often an individual problem. Tonsil disease is not always recognizable by the eye alone. Kidney impairment may exist unsuspected. Chorea, or St. Vitus' dance, even when mild may be accompanied by heart inflammation. Concealed tuberculosis of lymph glands may be the unsuspected causative factor underlying fatigue that has wrongly been considered only natural.

Dr. Sobel of the New York board of health has defined the status of the preschool child in these words: "The Bureau of Child Hygiene has always felt that the best time to take care of the child's health is before he enters school and that preventive and remedial measures undertaken at this time would do much toward the elimination or diminution of physical defects, and place him in a sound physical condition upon school entrance. . . . Any material reduction in the percentage of physical defects found in school children and a betterment of their general well being must come through the care of the children before their entrance into school."

Dr. H. D. Chapin, noting that there are about half a million children of preschool age in New York City, has stated that "all of these should be examined twice a year in order to recognize any condition or defect that can usually be corrected at the start."

According to figures of the New York State health department, cited by Dr. Josephine Baker and by Dr. Chapin, of the entire 22 million school children in the United States, 1 per cent are mentally defective; more than 1 per cent have heart disease; 5 per cent have or have had tuberculosis (an estimate far too low to include all degrees of healed tuberculosis); 25 per cent have defective eyes; 20 per cent are undernourished; about the same number have enlarged adenoids, tonsillar disease or glandular disease; from 10 to 20 per cent have orthopedic or joint defects; and from 50 to 75 per cent have defective teeth.

With the present provision for school physicians, how can the medical needs of millions of elementary school pupils be satisfactorily met in the school alone, after school begins?

Pediatrics today includes preventive measures in behalf of the well child. Because of the widespread susceptibility to diphtheria in the early years, even among those who have had this disease, every unprotected well child between 6 months and 6 years of age should receive a simple series of toxoid or toxin-antitoxin injections to develop immunity of a permanent type. A Schick test employed six months after the injections will show whether they have been sufficiently protective.

Unless there are special contraindications, moreover, every unvaccinated child before entering school should be vaccinated. Fortunately, autumn is an excellent time to cope with this necessary annoyance.

If parents studied history as carefully as do their children, the medical profession would not be called on to defend vaccination and diphtheria immunization. Both of these practices deserve place in a modern Book of Leviticus.

Johnny has adequate time in which to dispose of his tonsils and adenoids and get the better of his ear condition before school begins. His enlarged glands may subside later if he fulfils the tonsil contract. Susy may have asthma tests and a thorough heart examination before rope-skipping and roller-skating are again the "rage." Katy may have her hair evacuated (with any indicated "third degree" bob), Tony may part with his bad teeth, and Rosy can make the acquaintance of eyeglasses, all in the vacation period.

In some way the individual problem of each child may be effectively attacked if not completely solved. Even when the family exchequer is inadequate for special medical attention, good hospital and clinic facilities may usually be found.

When an inexperienced aviator cuts loose from the earth and soars into a new environment where his life scheme is altered and the downward drag of gravity becomes a paramount consideration, he wends his apparently independent way with a good pilot, backed by a weather expert.

The child entering school for the first time is going into a new realm. For a time he will be "all up in the air" so to speak. His take-off, like that of the aviator, calls for a carefully checked-up motor, the best possible fuel supply and lasting safeguards.

Between Princes and Paupers

By

Sophia Yarnall

Her allowance was the least of the benefits that our little daughter derived from her new ventures in independence.

"IT'S NOT for ourselves that I'm distressed; it's for the children. Poor dears, it's so hard for them not to be able to keep their cars or even to go away for the summer this year." A friend of mine was talking to a few intimate friends at a dinner party. Her husband's business had failed a short time before and had turned them overnight from wealth to poverty. A flood of replies, some sympathetic and some protesting, started a tremendous discussion.

"Why shouldn't your children share your misfortune as well as your good fortune?" asked some.

"It doesn't hurt any child to learn to live simply," said others.

"But," said the mother, "Tom and I have never even mentioned money to them. We've always felt as our families felt before us, that one never talked about money. It was like sex—one just found out about it when one grew up."

Indeed, as the matter was talked over, the whole group became suddenly aware of the fact that none of us had ever talked about money or thought about it either, for that matter, until we had grown old enough to marry and find out the cost of bread and butter and coal. A Russian of the old régime was at this dinner, and after listening to the conversation he suddenly began to describe his upbringing on a big estate outside Moscow. He said there was an enormous safe filled always to the bursting point with rubles in his father's house. Every time he and his brothers wanted to go to town they filled their pockets with money and came back for more when they had spent their supply. No one asked them any questions, and the safe was always full.

"It was not a good equipment for facing life without a safe full of rubles," our Russian friend smiled ruefully. "It has taken me so long to learn that there is not always a fresh supply, once you have spent what is in your pockets. This upbringing may seem different to you Americans, but it really is only an exaggeration of the way you have been taught to look at money."

There was a chorus of protests at such an assertion; yet, in the end, we had to admit his point. We had been brought up with almost as little sense of responsibility about spending money as he, and our ideas on where it came from were just as archaic as his and his brother's. Somehow we were always provided for, unless our ideas were too lavish. When we were not given what we wanted, we were never told that father could not afford it; nor were we informed that if we were given the coveted item it would mean doing without shoes or lunch or school. Money was simply not mentioned. It was a vulgar but useful commodity toward which we, as children, did not have any definite attitude, either good or bad, because we scarcely recognized its existence.

There, really, lay the tragedy of the woman who had started this whole discussion; it was not in her husband's losses or in his and her ability to change their way of living, but in their complete ignorance of their young daughters' capability of economic readjustment. My husband and I were so struck with this predica-

ment into which a false sense of the fitness of things had precipitated them that we decided we would thrash the whole thing out while our children were still little and that we would at least formulate some policy regarding their attitude toward money.

As we talked it over, we found there were two separate and distinct phases which must be taken into account. One was our children's own beginnings of an independent economic life, and the other was the relationship in size and grandeur of their possessions to those of their contemporaries.

The first problem was how to make our children economically responsible from their early years without making them money conscious. The example of the rich man's son squandering his father's fortune is too obvious and too frequent not to frighten the most optimistic and moderately well-to-do parents. Apparently the young cannot have access to a limitless supply of dollars or dimes without disaster. How then to curb and guide them?

It seemed to us from the beginning that they should have a weekly allowance, as regular as clock-work and as inflexible as any future income from a trust might be. Then, perhaps, if there is anything in that much regarded ritual, habit, we would be able to build in them a love of order and regularity and a knowledge that, come what may, there would be no more nickels or dollars as "income" before "next Monday." I say "income" advisedly because we believed that a child had a right to a certain amount of economic latitude if he could show himself capable of ingenuity and industry. Obviously, all the benefits of an inflexible allowance amount to nothing if Johnny can get an electric train or Susie a doll house just by asking Dad for it. However, if Johnny wants an electric train badly and in addition to saving his allowance can earn money to buy it, he should be given an opportunity to assert his independence.

Our children have, by this time, bought all kinds of things in this way. In order to secure a much coveted doll, my 5 year old daughter put away my clothes and tidied up my room this winter for several weeks. The value of the doll was enhanced to her a hundredfold, of course, and her respect for herself and her labor was grave and not unwarranted. Then there were the by-products of the experience, which were as varied as they were useful to her. She learned that shoe-trees must be put carefully into shoes, light evening dresses hung inside a special bag and sweaters always folded and put away in drawers. In short, she will be much more independent in a number of ways for just that one tiny job which she did successfully.

Nevertheless, there is one stumbling block in this frank approach to economic matters with a child. It is so easy to allow money, in the form either of income or of allowance, to assume too much importance; then the child becomes that dreariest of human beings, a person with only material interests. A friend of mine with a modest income has a child who has been brought up with this modern attitude toward economics. I was talking to him once about his mother's house, which I thought was charming.

"Oh, it's all right," he said, "but there are lots of houses much bigger than ours. For instance, my grandfather has a big enormous house. You see we're not rich, but he is. He's got millions and millions of dollars."

Was it Victorian of me, I wonder, to be quite sick at hearing so much information about his family's resources from this young man of 8? Or had his parents, in their effort not to treat money as a skeleton in the closet, given him spiritual indigestion with an overdose of materialism before he was old enough to assimilate it? I rather think that the latter was the case and that frankness should have been tempered with discretion.

My husband and I considered that we had already accomplished a great deal when we learned to be realistic with the children about money, but it was not enough. In fact, not even half our problem had been solved, for many a child is beautifully adapted to his own and his parents' economic possibilities until he wanders a little farther afield and begins to discover

It is the unusual child whose heart is not wrung by his first real glimpse of poverty.

Some children develop an overbearing smugness toward their contemporaries.

with what unevenness property is divided. At first he notices the children of the extremely poor, and his sense of distress that they should be scantily clad or not have toys at Christmas is genuine. Indeed I think it is the unusual child whose heart is not wrung by his first real glimpse of poverty.

I remember my own bewilderment when I first heard the verse:

> "The boy who is not clean and neat
> With lots of toys and things to eat
> He is a naughty boy I'm sure
> Or else his dear Papa is poor."

I was, I believe, about 4 or 5 years old, and I can remember puzzling and puzzling over the palpable unfairness of the good child whose "dear Papa" was poor, receiving as little as Stevenson's "naughty boy." I puzzled and puzzled, but I never asked my parents because, well, just because I felt the subject was as taboo as the mysterious enigma of babies and their origin. Now as my own children begin to grow up, I find it far easier to explain the inevitable processes of Nature than the complicated system which man has evolved to care for himself once Nature has placed him on the earth. How much simpler it is to be lucid about biology than about economics! And yet, one cannot beg the question. Some sort of attitude toward children who have much fewer possessions must be taught a child.

That attitude, it seemed to us, should be an adult attitude in miniature. We avoided with dexterity ever getting into the position of having to explain why the little boy whose "dear Papa" is poor should not have material rewards for virtue. It was our belief from the beginning that our children should realize that goodness and badness had nothing to do with money or the lack of it. They have therefore never had presents themselves for being "good." Why should they? They never will when they grow older; why then should they be started on such a false premise? If they do not receive roller skates because they do their lessons well or are polite at table, they will not expect it for other children. That difficulty dismissed, it remains only to explain that Billy has no warm coat because his father cannot buy him one. Life is like that. And then one is quite reasonably questioned as to why some one does not do something about getting him a warm coat; perhaps some one does get him one, but there are always Billy's brothers and sisters and cousins, and one cannot clothe them all.

Soon one finds that "only explaining" about the inability of Billy's father to get him a coat has opened up a whole world of discussion. Socialism, communism and capitalism are all brought out and gone over to determine whether we, as a family, cannot remedy the situation. Finally the children's point of view simmers down to our own rather hopeless attitude. After all, no one family can change the economic status of the world in a day, so it must be accepted as it is. The most that one can hope to do is think about it and modify or enlarge the point of view of one's own generation or group according to one's influence. This may not be progressive, and it certainly is not noble crusading; but it has, at least, the virtue of being honest, and for all its bitterness it is a salutary lesson for the young.

There was still another problem to face about our children's economic and social education, and this proved to be the most subtle and difficult one to solve. At any rate, it seemed that it would be more complicated than the others, and we anticipated it, if not with alarm, at least with concern. It was the problem of our children's playmates who would or did have a great deal more money than our own children. While our children were still in rompers, we began worrying about it. There was not only my husband's and my own natural antipathy to living elaborately, but there were the obvious boundaries set by our extremely limited exchequer. Would our children find it dull, we wondered,

to live in a small house in the suburbs after they had known the joys of other friend's ponies and swimming pools? Yet these were pleasant accessories which they should be able to enjoy from time to time without possessing.

I remember, not so long ago, going to a resort where everything we did, from early morning to late at night, was luxurious and expensive. The houses we dined at, the food we ate, the music we listened to and the games we played were all beyond my normal scale of living. It was a most pleasant holiday, which I should have hated to miss; and I should like my children to visit similar resorts at some future time with the same enjoyment. This they would not and could not do, however, if we developed in them a puritanical attitude toward the expensive accessories of life.

We hesitated before choosing their schools, realizing that here their friends would be made and some of their tastes formed. My tendencies were socialistic at first. I was eager to send both children to schools where their contemporaries would not have wealthy parents. The logical place for them would be, of course, the public school. However, this is not an infallible place of learning; its excellence depends on the local politics, the place where one lives, the growth of the community and the state of its finances. My husband pointed out to me that in our particular community the schools where wealthy boys went were, after all, the best schools from a scholastic point of view and that what we really wanted from a school was the best possible education for our son. I had to admit that this was true and that there were no better day schools or boarding schools than those to which the most prosperous of our fellow citizens sent their sons.

For the girl it was different. For some reason, wealth and the better education of the female infrequently go hand in hand. We did not want our daughter to learn to ride or have a first hand knowledge of the theater at the expense of Latin and Greek; hence we avoided the obvious educational institutions of the well-to-do for her.

I used to worry about our son incessantly, for we did not want him to acquire a luxurious standard of living; yet we were eager to avoid his having a sense of conflict between the things he could do with his school friends and the things he could do at home. I had seen a good deal of havoc wrought in the minds of the young by the attitude of their parents to their more affluent friends—that half envious, half obsequious, ever present consciousness of material inferiority which can so poison any relationship. I had also seen children who, knowing no friends with more possessions or comforts than they, developed an overbearing smugness toward their contemporaries. I often wonder which type I dislike most. Certainly, my husband and I decided, we could not bear to have our children either envious or complacent; and in order to guard against it, we must examine our own attitude toward money with care.

Children, after all, absorb the points of view of their parents with alarming acquisitiveness. They cannot help taking in through their pores, as it were, the real estimates that we adults put on life. Try as we will to conceal our real convictions, somehow or other our children always find us out. Therefore our desire to build up in them a certain attitude toward money and the people who have it must start with us and our own conception of what are the important and significant things.

By birth, training and education, both my husband and I had developed a comfortable enjoyment of all good things, materially speaking, when they came our way. By practice, we had learned to treat their lack with indifference and unconcern. It was a happy adjustment, we found, and one we wished to hand on to the children. We did, and it has worked for them with equal success. We find they thoroughly enjoy the possessions of their more wealthy friends and are still happy to return to live on their own simple scale. Gradually they have learned to evaluate such things as houses, automobiles, clothes and amusements. They have discovered they do not want more than three meals a day, one bed to sleep in or one piano on which to play. They have learned, in fact, that elaboration does not breed content, but rather that it entails complication and responsibility. They have acquired a certain taste for simple living, a taste which we admire —perhaps because it coincides with ours—and at the same time, they are not above getting a "big kick" out of the newest thing in bicycles or electric trains.

Already our children have gone a long way on their road to a definitely formed attitude toward economics. We have gone step by step with them, trying always to be honest and not to evade any issue about which they wish to know. We have tried to develop in them, in miniature, what we consider the most ideal approach to money. We have tried to teach them through their own allowances and through their ability to earn money themselves, just how an income can be obtained. We have tried to show them the responsibility of those with a little more money toward those with a little less. And we have prayed that, standing as they do in a rather middle position on the economic ladder, they might avoid a sense of insecurity or a sense of smugness. How far we have succeeded is not for us to say. We can only launch them forth in this, as in other ways, knowing that if the foundation has been sturdily built, they will stand steady and secure; if not, there is little that we as parents can do to change them, once they are grown to man's estate.

No parent worthy of the name begrudges a reasonable personal sacrifice which he or she has been compelled to make for the sake of a bright and healthy child.

H. Armstrong Roberts

Sex Education:

Reproduction in the Plant and Animal Kingdoms

By THURMAN B. RICE

THOSE who would understand the process by which plants and animals may produce other plants and animals of the same sort and, in particular, those who would like to understand the matter of sex as it is manifested in the reproduction of the human race can do no better than to study the phenomenon as it is manifested in simpler forms of life. The process as it is observed in man is so complicated, as a result of various social, moral and ethical relations, that it is necessary first to study the subject in some easier form. As a matter of fact, every phase of the process may be scrutinized in this way without arousing the various prejudices and suspicions that have so clouded the issue. Many parents are anxious to initiate their children into the mysteries of the subject; but when they attempt to do so, they are appalled by the lack of suitable means of expressing such concepts.

A fairly complete understanding of the phenomenon in lower forms of life will give the parent or teacher poise and resourcefulness which will be greatly needed in teaching the subject and in developing a satisfactory philosophy of life. Not infrequently the teacher needs more than anything else concrete illustrations for the explanation of the various difficult points, and usually a vocabularly is sadly lacking. He who teaches must have reached some degree of mental poise and decision on these matters. There is no better way to do this than to become acquainted with the elementary biology of sex as it is manifest everywhere about us.

What a pity it is that every child cannot have had instilled in him a love and a deep respect for the processes of Nature! Parents will do well to utilize every possible opportunity to feed the native interest of the child in all sorts of living things. There is no substitute for an inspiring opportunity to study Nature and to gain a first-hand knowledge of her fundamental truths. Unfortunately, there are still many parents who will not permit their children to study zoology in high school or who do not wish them to hear discussions on matters pertaining to the sex of plants. Still more unfortunately, there are a great many teachers of biology who have not the slightest conception of the real subject and who teach a stereotyped book knowledge that is essentially worthless in helping the child to understand the great problems of life. This series of articles is by no means intended to serve as a course in biology, and I shall make but a brief attempt to instruct the reader in this most important subject. But I do believe that it is necessary to the proper development of this subject to consider some of the facts as they are revealed in the lower species of plants and ani-

mals. These facts will help the reader to understand what is later to be said and possibly may serve as teaching illustrations when the subject is actually being presented to the child.

Obviously each species must have some adequate way of reproducing itself or else it would long since have perished from the earth. Never once has there been a break in the continuity of the life of a given individual since the day of Beginning. The continuation of the species is the most fundamental instinct of every plant and every animal. Most plants begin to die as soon as the seeds are well along toward maturity, and all animals except man are ready to die as soon as the end of the reproductive cycle has been reached. It is sometimes supposed that the instinct of self preservation is strongest in man and beast, but every one must have seen men and women risking life, reputation, health, social standing, wealth—everything—in order that they might express themselves sexually or take care of their offspring; hence it must be concluded that the instinct for reproduction is really basic.

Two general methods by which the species may be reproduced are observed: the sexual and the asexual. Animals, except the lowest forms, use the sexual method. The same is true of most plants, but there are a considerable number of them which have dispensed with sex as a means of procreation. The bacteria, for example, merely divide in the middle, making two new individuals which are exactly alike and like the parent cell. In a sense the various individuals in a bacterial culture are really different fragments of the same original germ. Even high in the plant kingdom one can see essentially the same thing. A twig from a willow tree becomes itself a willow tree. It is like the parent tree for the good reason that it is a part of the parent tree. A number of cultivated species of plants are propagated by tubers, roots, bulbs, cuttings and grafts, which are all asexual means, though these plants also have sexual organs. Seed potatoes represent a use of the asexual method, while potato seeds, which are occasionally found in small pods where the flowers have been, are of sexual origin. Several of the low forms of animal life can reproduce themselves merely by dividing or being divided.

Even though they may use the asexual method of reproduction, it is now believed that all forms of life have some sort of sex, rudimentary though it may be. Until recently, bacteria have been considered as being exceptions to this general rule, but now a great many authorities believe that even they manifest an extremely primitive activity which is to be regarded as being truly sexual. As Nature has used this particular plan in the life of every one of her products, the conclusion is inevitably forced on one that there must be some most excellent reason for the phenomenon. Suppose that every individual of a given species were free to reproduce himself by asexual means for an unlimited number of generations. It is easy to see that a given strain might come rather soon to be quite different from the original species. In this way there would arise an enormous number of varieties, and a condition approaching chaos would result. This is, indeed, exemplified by the fact that those plants which are reproduced by bulbs, cuttings and tubers, such as roses, dahlias and gladioli, commonly have a great number of varieties. Nature seems, however, to hold the majority of species more constant; hence each time the act of reproduction is repeated, it is necessary for a given individual to fuse his heredity with that of another individual of the same species. In this way each separate drop of living matter is merged with the great ocean of related living matter, and wide deviations from the type species are much less likely to occur.

However that may be from a theoretical standpoint, it certainly is a practical fact that sex is fundamental to the continuation of all higher forms of life. It is indispensable. It is the warp of life into which an infinite variety of patterns may be woven by manipulation of other factors which may be called the woof. Sexual reproduction is the masterpiece of Nature. Into this process she has poured her sweetest perfumes. The flower, for example, is the sex organ of the plant. About this process she has drawn her most beautiful patterns. Into it she has dumped her paint pots, as witness the colors of the mating bird, the butterfly and the flower. Music and poetry are called on to adorn it. Sex is motivated by the most precious of all passions, conjugal and parental love. Young girls are as enticing as possible, and young men are handsome and valiant. The young of most species are charming or, if not that, they are at least interesting. Every one

Century Photos

Feeding hungry fledglings is no small task.

Century Photos

The bee carries the male element to the female organ of the next flower.

loves the puppy, the colt, the kitten and most of all, the baby. Who can be so blind as to fail to see in this thing the very essence of life itself?

In looking into the simpler and most familiar forms of sex, one may discern opportunities for the teaching of human problems to children. There is the flowering plant; for example, the bean. Every child is familiar with the seed of the bean, and if he is not accustomed to seeing the growing plant, it is quite a simple matter to plant a few beans and see them grow. Beans intended for planting should be used, since beans bought for food purposes have often been heated enough so that the germ of life has been killed. A flower pot in the window will serve if there is no room for a garden. The child will be much interested in planting the seed and in seeing it grow. Finally the buds and then the flowers will appear. They are the most beautiful part of the plant. Insects will visit the flowers and will go from one to another sipping the nectar and transferring the pollen as it sticks to their legs. Even a crude dissection of the flower will reveal two sets of organs in the heart of the blossom. The one set, the stamens, carry at their tips a yellow powder (pollen) which is the male element; while the other, the pistil, is the female portion of the plant and has a sticky spot on the end to which the pollen will adhere if it should touch.

The insect in visiting one flower after another carries the pollen of one plant to the pistil of another. The pollen grains sprout and grow down the entire length of the pistil and carry the tiny cells that unite with the egg cells to form the seeds, which are essentially new individuals. The growth of the seeds in the pod, the body of the mother plant, may be easily followed. Essentially the process is exactly the same as is observed in the higher animals except that the two points that are the most difficult to clarify to children are much more simply explained. Most important is the fact that the part of the process which corresponds to the mating of the sexes is the apparently trivial visit of the bee who carries the male element to the female organ of the next flower. In the teaching of sex to children it is usually this point that perplexes most parents. Possibly the use of the bean plant as an example may make it easier to explain this part of the process. Emphasis must, of course, be put on the significance of the whole program and not on this particular episode.

Other plants may be used in somewhat the same way. For example, the flowers of the members of the melon family, such as muskmelons, pumpkins and cucumbers, are not all alike. Some of them have only the female organs, while others have only the male. In this respect they are more like the higher animals with which we are particularly concerned. In the case of certain fruit trees and of strawberries there are some barren plants which are male. These plants never have fruit; but if they were all pulled out, the other plants as well would be worthless.

The nesting habits of fish furnish an excellent example for teaching purposes. The females lay their unfertilized eggs in a clean spot on the bottom of the lake or stream. The male then comes to the nest and pours over the eggs a secretion known as milt, which consists of millions of the sperm cells. When one of these sperm cells unites with an egg cell, a new individual life begins. Obviously the method is exceedingly wasteful, but it is the best that fish can do. The young are compelled to get along as best they may after they are hatched; and, as a matter of fact, great numbers of them perish. In consequence, thousands or even millions of eggs must be laid. By paddling slowly in a boat about the edge of a lake during the spawning season one may easily detect the nests of sunfish as clean round spots on the gravelly or sandy bottom, over which the parent usually hovers. The parent fish keeps the area clean and will chase away enemies who may come to destroy.

The mother frog does somewhat better. Her eggs are put out in a gelatinous material that protects them considerably. Then, too, they are black above and light below, making them less visible. The dark color absorbs the heat of the sun and hastens the hatching process. The male fertilizes the eggs at about the time they leave the female's body. When the young tadpoles

are finally hatched, they are usually compelled to get along as best they may in a cruel world; many of them serve as juicy tidbits for birds, fish and other animals. It is easy to find these eggs about the edges of ponds and to hatch them in a jar of water changed as frequently as the water for a gold fish would be.

The turtle illustrates a step far in advance. The eggs are fertilized before they are laid, and they are held in the body of the female until a considerable quantity of food has been stored up in them and a firm shell is built about the food and the living portion of the egg. The eggs are then laid and covered in the sand near the water's edge. There the heat of the sun stimulates growth, and they are hatched after they are in a rather advanced state of development as compared with the young of the fish and the frog. Far fewer eggs are laid, for the good reason that the few that are laid are better equipped. Even so, there is no care on the part of the parents, and the young have strenuous times escaping the myriad dangers which beset their paths.

Birds do still better by their young. The parent birds mate and build a home, a most interesting home, indeed, as one may observe by sitting quietly and watching. The egg is retained in the mother's body until it is large and loaded with food for the young bird. It is then laid in the carefully prepared and concealed nest, where it is faithfully guarded for days by the mother, who hatches it with the heat of her own body. In the meantime the father bird has protected the nest by driving away enemies or has attracted attention and danger away from the nest and to himself by flashing his bright colors and brilliant song from a tree safely remote from the nest. When the young are hatched, the parents bring food and the mother keeps the nest clean and picks lice and other vermin off the young. She hovers over them when they are cold and when it is storming; she powders them with dust from the road, thereby discouraging insect pests; she never rests in her untiring efforts to feed and protect them; she teaches them to fly and to find food for themselves.

A most interesting subject for children to study is the nesting habits of the birds. City children need not often be at a disadvantage in this respect, for robins nest everywhere and canaries can be had for a small sum. The larger cities may have fewer natural facilities, but such cities usually have zoological gardens and museums where there are unusual opportunities for such study. Parents who are awake to the possibilities can always find opportunity for such instruction in Nature and sex.

Higher in the scale the mammal takes even better and longer care of the young. The egg is developed as in the case of the other animals mentioned but is never entrusted to the dangers of the outside environment, for it is far too precious, and so the young develop in the body of the mother. When the time comes that they must be delivered, Nature has provided for them a food which is taken from the mother's body and which is the perfect food for the growing baby animal. The protective instincts of the mother are easily observed. Here is an example of parental love which is easily recognized even by a young child. Unfortunately, the function of the father is often much less inspiring, as the male of most of the easily studied mammals is apparently little interested in his offspring.

In my opinion, it is therefore a mistake to say too much about the male parent when referring to mammals. The example of the birds is better and more easily observed. By this I do not mean that the act of fertilization is any the less proper, but as human children are being taught, it is better to use examples which more nearly resemble human customs.

There are authorities on sex education who advise that children should be deliberately shown every phase of reproduction, as may be easily shown in dogs, for example. I am inclined to think that it must be rather hard to make the demonstration edifying. I believe that this is a phase of mammalian life which had best be left to accidental observation. If the child, after having been properly instructed in such matters as have been indicated, asks questions about the more obvious facts of mammalian life, the whole matter should be discussed with him, and the social need for discretion in the mentioning of such matters should be explained.

Even a child must have observed that the human being is an animal and as such has many of the ways of an animal. But a child must learn early that the human being is much more than a mere animal and should conduct himself accordingly. Human children are precious. They must be given infinite care over a long period of time. In this way the child can be made to see the reason for the family as human beings have it. In this way he comes to appreciate the rôle of the father and the mother, who

Century Photos

The higher the animal in the scale of life, the greater is the protection of the young.

have built about the child a home that is stable and safe and is the core of his existence. The functions of the father and the mother in that home seem widely different, but each is equally important and each has for its purpose the preservation of the child himself. The child sees his father working, bringing home food, paying for coal, furnishing a house in which to live, protecting the child from injury, giving elemental care, playing and romping with the child, planning with him and helping and advising him. Every boy and girl should believe that his or her father is of the nature of a god; so in this way the human father lifts himself above the level of the father of a puppy. The child sees, or should see, the father and mother exchanging embraces and words of affection. He realizes that sacrifices are being made; so he comes to the way of thinking that anything that his father does must be quite all right. As a matter of fact the father's position in the family will be much more easily taught if everything that the father does is indeed all right.

The Rôle of the Father Is Difficult to Explain

I am here giving much attention to the father for the reason that his rôle is commonly considered to be the hard part to explain. It is hard to explain, probably, for the reason that the male of most of the lower species has so little to do that is exemplary in terms of human conduct. Unfortunately, for one reason or another, a considerable number of human fathers also do little that is exemplary by the same standards; hence their purpose is rather difficult to explain to the innocent child.

The function of the mother is much more obvious and does not need any particular elaboration here. One point is important. The actual deliverance of the child from the body of the mother is usually a considerable ordeal and may easily become a family catastrophe. Consequently it is hard to make the child understand why such a process is necessary if he knows all the sordid details. For that matter, it is hard to make adults understand why the bearing of children should be so difficult. Why must childbirth in the human being be so much more difficult and dangerous than in the animals? The reason is to be found in several relations which are not obscure. In the first place, there is the matter of the erect posture, which has done much to change the configuration of the pelvis in many women and particularly in those who may have suffered as children from the disease known as rickets. This disease allows the abnormally soft bones to be excessively distorted by the weight of the body, and in consequence the birth canal is too narrow. Secondly, the nervous development of the human mother makes her much more susceptible to pain than are the lower animals. Human beings are not clods; hence they feel more keenly. In the third place, the human child is so precious that Nature strives to hold him as long as possible in the safest place. Furthermore, the human infant is exceedingly helpless even then and would be dangerously so if he were born any sooner. For this reason the mother must carry the child a relatively longer time. Finally, the development of the head, which is made necessary by the large size of the brain, enormously complicates the act of delivery. But that marvelous brain is the one really great characteristic of man, and one must not find fault with that which makes man great among the creatures of Nature. Thousands of those brains are now actively engaged in devising means of making childbirth easier and safe, and they are succeeding, too.

I am presenting these facts for the enlightenment and instruction of adults, but for the sake of the child. In my opinion it would be a great mistake for a mother to call a child to her side and initiate instruction in these matters by telling him how "mother went down to death's door and suffered horribly in order that her baby might be born." The child knows nothing, and can understand little, of sacrifice and suffering. He does not know that things that are precious are also expensive. He is often shocked and frightened. In the child's mind, pain is always bad and always to be avoided. Entirely too much has been said about the sacrifices of motherhood and far too little about the privileges. No parent worthy of the name begrudges a reasonable personal sacrifice which he or she has been compelled to make for the sake of a bright and healthy child. Then why talk about it? Particularly is it bad to throw the matter in the face of the child.

Understanding of Sex Broadens Meaning of Life

The public is in great need of an understanding of sex as a normal physiologic function of the greatest consequence to the perpetuation of life on the earth. When this subject is assigned to its proper place in the scheme of things and is interpreted properly, the understanding of it adds enormously to the meaning of life.

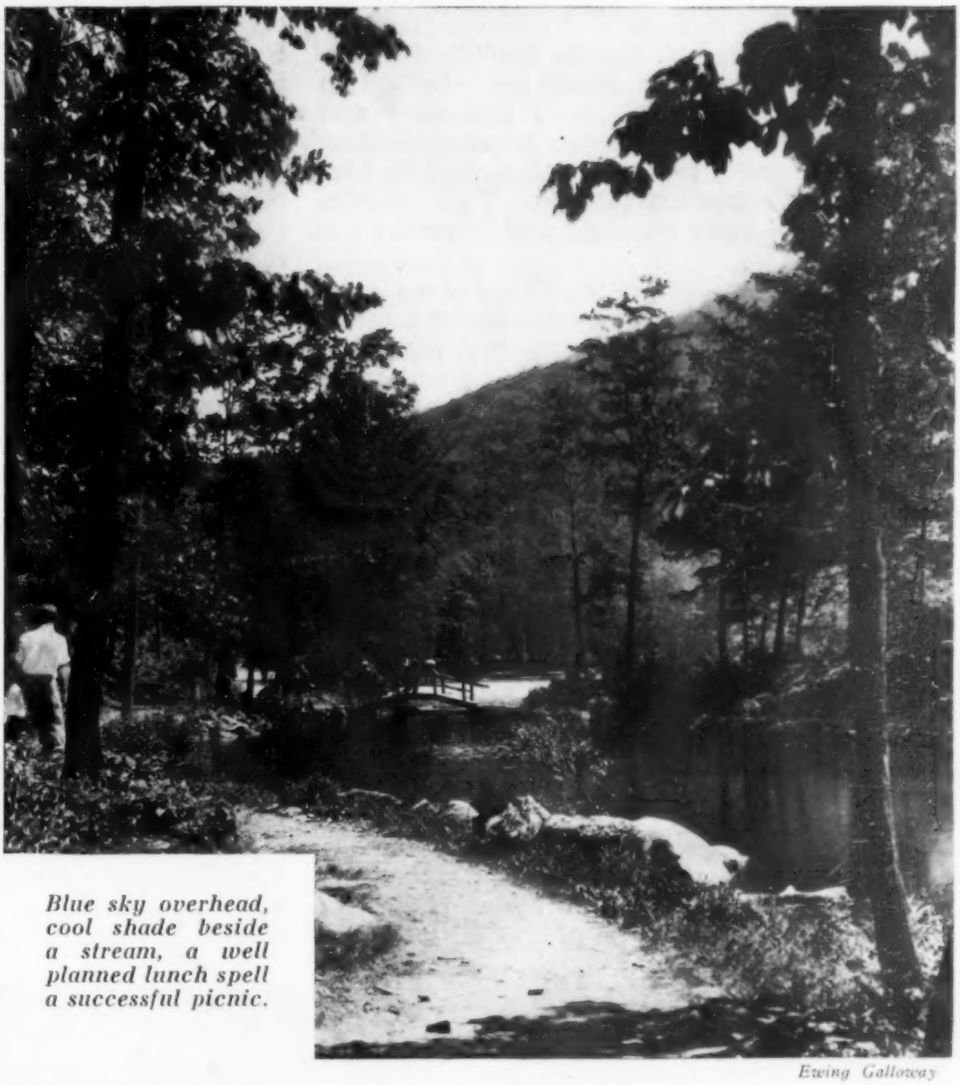
Fortunate, indeed, is the child whose parent so understands the subject that he may lead the child by gradual steps to a realization of the importance of sex and who arouses in him a determination to protect and conserve this vital force which unites in him the glorious past and the still more glorious future. There is no better way to attain such a position of wisdom and understanding than by studying the manifestations in those species which represent the steps by which man has attained his present position of eminence in the world of living things.

[NOTE.—In the September issue, Dr. Rice will discuss "The Anatomy and Physiology of the Reproductive System."]

EATING UNDER THE SKY

By

Mary C. Brown



Blue sky overhead, cool shade beside a stream, a well planned lunch spell a successful picnic.

Ewing Galloway

WITH only the clear open sky overhead, let us spread our table for a picnic. Of course, we shall have a table, for it is disconcerting to stoop and crouch to a repast seasoned with grasshoppers and ants.

The average picnic is a most unmethodical affair. The American family, a heterogeneous group of personalities varying in age and tastes, gathers together to eat under circumstances different from the usual. "It's too hot, and I don't want anything to eat!" declares 15 year old Jane. Jim, arriving fatigued from chasing butterflies, refuses to eat. Father fusses and fumes like a roaring lion because he is hungry. But note how tranquil he becomes at the end of the meal! The best part of a picnic is the relaxation that follows. No one wants to rush away. There are no dishes to wash, and there is no telephone to answer. One can pack the basket and linger for a game of cards. Father likes to stretch full length on the grass and gaze up at the sky, at first clear blue with little fleecy clouds, then gray streaked with darker gray and later sprinkled with the first stars at twilight.

Ours is a family of picnickers. When Daddy comes home from work early and suggests a picnic, each one of us welcomes his suggestion to go to the park or out into the country. It is so much more restful than eating in the dining room that the whole family looks forward to these frequent outings and plans summer menus which can be tossed into a basket. The food seems to taste better in the great outdoors. One must, of course, have suitable containers ready for transporting food in fresh, appetizing condition, with all its original wholesomeness.

The delightful informality of putting a meal into the picnic hamper at the last moment has appealed to our family more than to plan and plan, and stand for hours frying chicken and baking pies. A simple meal can be quite well balanced and artistic, certainly more serene, and considerably better from the health standpoint than the picnics my husband enjoyed in his boyhood days. He tells of sampling twelve different kinds of cake at a Sunday school picnic, of comparing the culinary skill of six women as exhibited in their crocks of baked beans, and of eating three kinds of pie with tricolored ice cream, pop and pink lemonade. Memory is kind. He does not remember early aches in the abdominal region following such gustatory experimentation.

It is not necessary to serve two starchy vegetables or two kinds of meat. This was the mis-

take that our mothers in rural communities made; there were too many dishes which looked irresistible.

It saves considerable time to plan and execute a menu consisting of one balanced meal which all can eat, omitting all ramifications, variations and substitutions. Vanilla is a flavor liked by every one. Desserts simple enough for the young members of the group are planned to look and taste well. If both chocolate and white cake are served, some persons, finding themselves unable to decide which will be best liked, help themselves to both. This doubles the amount of cake required and increases the cost.

When two families get together for a picnic, it is best to outline a menu. Some Sunday afternoon the neighbor phones and says that she has salad, meat for cold slicing and some celery in the refrigerator; let's have a picnic! But we, not so well prepared, stop at the store and buy cookies, bread and bananas. Bananas are high in carbohydrate, they are filling when the meal has been a bit scanty, and they come wrapped ready for use, requiring no chilling, dishes or forks. The children like them when they are a deep golden color flecked with brown; then they have reached their maximum sugar content and are full flavored.

Fresh tomatoes, famed for vitamin C, are not quite so easy to handle, but by selecting medium and small sized, dark red, meaty tomatoes, well ripened but as firm as possible, one may surmount that difficulty. Each tomato is wrapped in clear cellophane with a perky twist at the top. Mayonnaise, sugar, salt and pepper are all packed into the basket to allow choice of seasoning. The same type of wrapping is used for a cup made of curled lettuce leaves and filled with a moist salad. Bright colored wrappings dress up plain white food, green being a favorite, in keeping with the surroundings and the desire for cool restfulness.

Lettuce is often a disappointment if it is carried far. Since it is so important in the diet, I experimented to find the best way of caring for it. After the lettuce has been thoroughly washed under running water and stored in a covered pan, with the moisture clinging to it, its leaves become crisp in the refrigerator. The covered pan is then placed on a larger pan of crushed ice and carried along. The lid is removed at the last moment to prevent the lettuce from drying out and wilting. Celery, radishes, young onions and tender carrots are handled in the same manner.

Many a picnic has failed for lack of something sour, or tart, such as pickles, jam, oranges, grapes or lemonade. The pickles are less desirable than the fruits. A bit of tartness adds zest to the meal. The fruit acid in oranges is exactly what is needed to round out a meal of meat, bread and cake.

There is a definite need for sharp contrasts in color, in texture and in flavor, as well as for the time-honored balance of protein, carbohydrate, fat and minerals, with a liberal sprinkling of all the vitamins.

Because picnic baskets have a habit of jumping and jolting in a most upsetting way, it is a genuine problem to carry the foods that one might like to serve together.

On a chair behind the table, in one illustration, is shown a trusty basket. It is metal lined, with a removable container for ice. The cake carrier has strong wire handles, which open out to allow the removal of the decorated top. If a wire rack is used on the tray, two pies may be carried. When the two pans shown on the other side of the basket are carried home empty, they may be stacked inside each other conveniently. In those pans may be carried chicken salad, creamed salmon, scalloped corn, tender flowerlets of raw cauliflower marinated in

A trusty picnic basket with a removable container for ice, various food containers and small conveniences keep food crisp, clean and tasty.

French dressing, hot buttered cauliflower, custard, fresh buttered asparagus, Parkerhouse rolls or gelatin salad. The covered casserole is equally versatile, allowing other dishes to be stacked on top of it. The lid, when removed, can be placed on the table under the dish. The casserole is of enameled ware, which does not break or chip quite so readily as does china, yet is clean looking, colorful and light in weight and can be used in the oven.

The refreshment set, consisting of black aluminum tray, shiny aluminum pitcher and small trays, is used often on the porch; but when it is wrapped in a soft cloth to prevent scratching, it may be taken to picnics elsewhere. Paper cups are used then instead of fragile glasses, and colored loaf sugar molded in fancy shapes is used for the lemonade. The can opener is about to be used on the can of beans, and the little pan is ready on a small folding stove which uses a tiny can of solidified alcohol for fuel.

If there is not sufficient time for cutting and spreading sandwiches, or if they may dry out, pack a cutting board and a knife having a serrated edge for producing neat even slices.

To guard against the usual forgetting and to expedite departure, I hit on the plan of leaving in the basket all the nonperishable items that will probably be needed; the sugar is left in a tight container and the salt in a shaker that actually shakes and has a cover for carrying.

The paper tablecloth mortality was rather high; hence I invested in a roll of gay oil cloth. This I cut into a long cover for the long picnic table in the park and a shorter one for our own family folding table. A damp cloth in a covered jar is used to wipe the cloth clean before rolling it to take home and put in the "picnic corner" of the pantry. This corner contains the following supplies, ready for use: sandwich spreads, jam, olives, peanut butter, malted milk, canned spaghetti and beans, boxed crackers, cookies and wafers, tiny cans of sieved vegetables and strained cereal for baby, a roll of heavy waxed paper for wrapping sandwiches, and sheets of vegetable parchment paper for wrapping wet foods.

In another illustration a relish dish occupies the center of the table; this is a nice piece of heavy glassware which gives the table an air of distinction and dresses it up quite as much as a bouquet. The golden carrots and the delicate yellow-green leaves and straight firm stalks of the celery form a contrast to the dark purple jam. This dish brings what is lacking in meals of sandwiches made of cheese and meat. Into the tall pail, shown with its cover clamped in place, may be packed the plates, cups, deep dishes and saucers, making a lunch kit which is ideal to throw into the auto. The knives and forks are sturdily built for hard kitchen use or for the breakfast nook in the kitchen. They do not chip, crack or warp, and they are good looking. At each place is shown a cup-cake baked in a paper baking cup and placed on a paper doily. An inexpensive cake batter is used in this way, and the paper keeps the cakes moist and tender. Cake and sandwiches dry out quickly unless they are kept in closed containers, and they become moldy unless they are kept cool. In rainy humid weather, select a dry storage place, lest the cakes become damp and soggy from soaking moisture out of the air.

Often we carry the main dish for our picnic in a wide-mouthed thermos jug; this hot dish may consist of baked beans, creamed new potatoes and peas, or a cream soup made with spinach. The jar itself is thoroughly heated by running first warm and then boiling water into it and by allowing the water to stand long enough to absorb the heat. Then the food is poured, actually boiling, into the container. *This is important!* At boiling temperature, bac-

This table arrangement is especially inviting to the family that enjoys picnicking in the garden.

teria are killed, provided the boiling is continued long enough; but in the transfer from the cooking utensil to the thermos jug, bacteria carried by the air may reach the food, and they manage to keep alive until the food has cooled sufficiently to allow them to grow. It is a safe rule to keep foods below 50 F., until cooked, and if they are to be stored again afterward, to cool them as quickly as possible. Beans, meats and nonacid vegetables are most likely to develop into dangerous foods if they are kept warm for several hours. In order to avoid this danger, baby's milk is carried in a chilled thermos bottle, poured into a heat-resistant glass nursing bottle and warmed by being placed in a jar of boiling water poured from a second thermos bottle.

A glass casserole is taken from the oven at the last minute, put into a metal holder or tray, and wrapped in newspapers to hold in the heat until serving time.

Here are some dishes which are easily prepared and are truly good foods:

CARROT SALAD

Use the tenderest young carrots; crisp them in the refrigerator, peel or scrape, and run them through a grater. Mix the grated carrots with boiled dressing or mayonnaise and chopped shredded cocoanut. Pile the mixture into a dish lined with lettuce or use it to fill sandwiches, which may then be packed into a covered dish.

FRUIT COMPOTE

Mix together 1 cupful of fresh cherries, 2 diced bananas, 2 diced oranges, 12 quartered marshmallows and 1 cupful of cooked prunes cut into pieces. Cover the mixture with cherry juice, pack into a fruit jar and submerge in cracked ice until serving time.

RAISIN FIG SALAD

Cover ½ cupful of seedless raisins with water; boil for five minutes; then drain, and dry the raisins on a towel. Clip the stem ends from 1 cupful of cooked dried figs and cut the figs in half lengthwise. Mix together the raisins, figs and 1 cupful of celery pieces. Cover the mixture with French dressing and pour it into a jar. Serve on lettuce with mayonnaise.

APRICOT CHEESE SANDWICH

Wash ½ cupful of dried apricots; drain, and cut them into pieces. Add 1 cupful of water and boil for about ten minutes or until the water is well absorbed; then add 2 tablespoonfuls of sugar and cool the mixture. Cream 1 package of Philadelphia cream cheese with the sauce, add a few grains of salt and 2 or 3 drops of tabasco sauce. Spread between buttered slices of bread.

QUICK CAKES

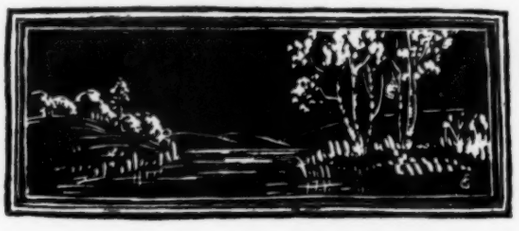
Cream together ¾ cupful of brown sugar, ¾ cupful of white sugar and ½ cupful of shortening. Add 2 beaten eggs and ¾ cupful of buttermilk. Combine with 2½ cupfuls of flour sifted with 3 teaspoonfuls of baking powder, ¼ teaspoonful of soda and ½ teaspoonful of salt. Add ½ cupful of bran, 2 teaspoonfuls of cardamon seeds and 2 cupfuls of dried figs which have been boiled one minute and chopped with a coarse cutter after the stems have been clipped off. Add ½ teaspoonful of orange extract and beat the mixture thoroughly. Drop by spoonfuls 2 inches apart on a greased pan. Bake for about twelve minutes in a moderate oven (350 F.).

PRUNE BREAD

Cream together ½ cupful of sugar and 3 tablespoonfuls of shortening. Add 1 beaten egg, 1¼ cupfuls of milk, 1½ cupfuls of bran, 1 teaspoonful of salt, 2½ cupfuls of flour, and 5 teaspoonfuls of baking powder. Add 2 cupfuls of prunes which have been boiled for ten minutes, drained, pitted and sliced. Beat the mixture thoroughly and pour it into a greased loaf bread pan and bake for about an hour and fifteen minutes in a moderate oven (350 F.). Test with a wire cake tester. When the bread is done in the center, place it on a table for a few moments until the steam has loosened it from the pan; then turn it out on a wire cake cooler until cold, before slicing.

CREAMY CUSTARD

Sift together ¼ cupful of sugar and 2 tablespoonfuls of flour. Add 3 beaten egg yolks (or 2 whole eggs) and rub the ingredients into a smooth paste. Gradually add 1 pint of hot milk and ⅛ teaspoonful of salt. Place over the fire, heat slowly and stir the mixture continuously until it becomes thick and creamy. Avoid hard boiling or long cooking. Beat thoroughly with a rotary beater. Add 1 tablespoonful of vanilla, beat well, pour immediately into a fruit jar and cover closely to avoid the escape of the vanilla flavor. Serve the custard in saucers with fresh berries or peaches. Sprinkle with cocoanut.



Production of the Human Voice

By LEON FELDERMAN

VOICE DYNAMICS is one of the most fascinating studies that can come before the otolaryngologist. For some unaccountable reason, the nose and throat specialists have been remiss in the research of this interesting work. Dr. Joseph C. Beck of Chicago, who officiated as the chairman of the board of otolaryngology a few years ago, aptly said that candidates coming before him showed a decided weakness on subjects pertaining to the larynx. So neglected is this field by the ear, nose and throat specialist that the play has been taken entirely out of the hands of the specialist, and numerous teachers have come into existence with all kinds of fantastic theories which do not comport to the laws of physiology or physics. It seems that any gentleman with long hair and a booming voice can qualify as a self styled maestro in the art of speech or singing. His teachings are not necessarily based on the true laws of physiology and are frequently dependent entirely on guess work. This system would be highly ludicrous were it not for the fact that some of these young promising artists are robbed of their time and become disillusioned once and for all.

What is required today is a standardization of facts relating to the physical laws which govern human sounds and their musical behavior. Fortunately there are a number of scientists like Sabine, Sacia, Stanley, Crandal, Steinberg and Fletcher who are working incessantly for the development of the physical property of speech. Human sounds cannot be analyzed or dissected in the same way as may the human body. Anatomically speaking, the human body is composed of skin, superficial and deep fascia, muscle and bone. Likewise it is known that a chemical body has certain chemical behavior and qualities, such as atomic weight, odor and other physical characteristics, by which that chemical is recognized. With human sounds, one must rely entirely on the human ear, which gets its impulses from the speech center located in the brain. Sound is generated in the larynx, and it must be radiated in the external atmosphere where it encounters solid objects which bring about the reflection of the sounds, referred to by some scientists as pressure waves. These reflected or pressure waves are modified by the resonating action of the chest cavities and the upper air passages. The moldings of these cavities give rise to varied voice sounds and speech.

It seems that any gentleman with long hair and a booming voice can qualify as a self styled maestro.

The vocal cords are pairs of fibrous bands drawn sufficiently together to leave a fine opening called the glottis. The length of the glottis in the adult male averages about 1.8 cm. and in the female, 1.2 cm. The stream of air flowing through the slit or glottis sets the vocal cords in vibration. This in turn gives rise to periodic fluctuations on the flow of air through the glottis, and these fluctuations create the sound waves.

Speech is composed of fundamentals, called vowels and consonants. As the conversation proceeds, there is a constant shifting of these sounds which depend for their modifications entirely on the shape of the resonating cavities. When these sounds are continuous they are called continuants, and when the sound stream is interrupted they are called stops. In a singing phrase the sound stream goes on continually. There is more of that harmonious, colorful element, and the pitch changes at definite intervals of time.

It is interesting to consider some of the physical properties of speech which make it so characteristic.

One of the first qualities is pitch, a physical property which places the singer's voice within the range of music. It is the compass of the voice. It gives direction. It points the way and qualifies the singer. For example, if the singer

is of the bass type, the pitch can reach as low as 60 double vibrations a second, and he can ascend the scale of music to 1,500 vibrations if he is sopranic. Of course, it must be remembered that in the scheme of sounds the human voice can reach 8 double vibrations and as high as 3,000 double vibrations, but in the physiologic world of sounds this becomes entirely too fine for differentiation and is entirely lost on the human ear.

The second important physical property of the voice is intensity. There is the proverbial yardstick of time, space and matter, but in the world of sound the decimal system cannot be applied to these vocal phenomena, which undergo alteration with each vowel or consonant utterance. A speaking or singing phrase depends a great deal on its intensity, which in turn relies on the subglottal pressure coming from the thorax. The following comparison may be given as an illustration of this point: When a pitcher throws a ball, that act can be likened to pitch. The amount of energy back of the ball may be called intensity. Where physical force is required, the act of the boxer in finding the range of his opponent can be likened to pitch; and when he connects, that may be called intensity. When one walks into a room, the size of the room is comparable to pitch, and the various furnishings may be called intensity. In a painting, the ordinary picture, as of a tree, would be pitch, and the depth of the painting would be intensity.

Time is the prerequisite factor in singing or speaking. It is what punctuation is to grammar. The element of time plays an important part in its relation to music, just as the drug digitalis acts in relation to the muscles of the heart. I recall most vividly the long-drawn-out marches of troops in which I participated during the World War. At the beginning of the journey the troops were marching with unity, and their steps were quite firm and springy; in spite of the 40 pound pack which they had to carry, the soldiers would commence their march with some popular song. The song invariably would be one of quick tempo, such as "Over There." As the march progressed and the element of fatigue made inroads into the bodies of the soldiers, the singing was less harmonious or lusty; they would then select a song like "Mother Dixie and Me," in which the tempo was slower. By the time the end of the march was reached, only a few in the battalion would have enough energy left to sing some sort of a song, such as "Sweet Adeline," and judging from the tempo of their crooning melodies, one could detect in their voices chronic fatigue.

The tempo of a song often reveals the mental make-up of the composer. The autobiography of Chopin shows that when he composed "March Funebre," the funereal effects of the song were part and parcel of his mental make-up.

At the beginning of the march they sang lustily.

Pitch, intensity and time having been considered, the physical property next to be discussed is color. Color interpretation depends entirely on the individual singer. He must impart into the song the proper emotional effect. The play of emotions on a song constitutes color. It is in direct ratio to the emotional complex of the singer.

The final quality, which is not without importance in voice dynamics, is timbre. The art of persuasion generated by the human larynx is definitely linked with the timbre element, and what constitutes the effective speaker or singer is governed by the timbre of his voice. So strong is this characteristic that it can be traced for generations. In pathologic conditions of speech, such as stuttering and stammering, other elements may change, but the timbre make-up of a voice remains the same.

The human voice is a highly sensitive organ which governs sounds and in turn is governed by physiologic chemical laws. It is not true that one must inherit a highly cultured voice, for any voice can be improved through the proper application of the principles of speech or singing mechanics. It is equally fallacious to believe that one must have a supernatural larynx to bring about a highly desirable result.

The voice box, from the physiologic standpoint, consists of (1) a motorized force, (2) vocal cords and (3) resonating cavities.

When a speaker or singer phonates, what happens? The mental concept must originate in the Brocca's speech center. In accordance with this thought, nerve impulses are dispatched to various centers such as the thorax, larynx and pharynx, which are brought into coordinated action. It works the same way as a command given to a battalion of soldiers who have been trained diligently at West Point. The correctness of speech results from the combined impulses working as one harmonious unit. When a speaker mumbles his phrases or stutters, it is because certain inhibitions have stepped in and antagonized either one muscle

or a set of muscles, with the result that disharmony is created. The instruction which pupils often receive from their teachers to "Throw your mouth open and hold your breath and raise the pillars of the tonsils" is a physiologic impossibility and has a tendency to do more harm than good. Teachers of singing speak of breath control and expect the pupils to throw the breath stream against the palate or facial bones to produce a particular sound. This is entirely unscientific, since escape of air is governed by the laryngeal muscles and shaped by the resonating cavities. Unless axiation of the muscles takes place, a throaty effect is produced. The vocal cords are a pair of fibrous bands. During ordinary breathing when these are drawn together, they create a slit for the expulsion of the breath. This is entirely governed by the intrapulmonic pressure, which sets the vocal cords in vibration.

One must remember that the pitching quality never changes. In other words, the singer in order to sound a note must have a mental image, and the stimuli released from the brain area to the muscular system bring about the necessary action. If an inhibition should develop, whether it is psychic or real, the technic suffers, and the individual sings off key. When the brain center sends a message to the laryngeal nerve, there is an immediate vocal response and the group of muscles involved would depend on the intrapulmonic pressure.

A good singer intuitively avoids overloading. If he utters a certain note he may call on a certain group of muscles in the larynx; if he decides that he must sustain that note he will call on additional muscles, such as the arytenoids. If he is capable of rising higher in pitch and intensity, he may call on all the groups of muscles; otherwise there is a breakdown, or what the French call *coup de glotte.*

A good singer knows how to bring about first a mental adjustment and then a physical adjustment to produce the tone desired. When a speaker overloads the vocal tract, the immediate effect of that voice is screechy and unpleasant to the auditor, and one recognizes at once that the pitch in that person's voice has taken on a decided alteration.

Today on the radio the children's hour creates a great deal of delight, but it is safe to say that children heard over the radio today will seldom be heard of in the future, for child singers are prone to put so much effort into their vocal endeavors that they strain their voices. The high piping quality which is heard to the breaking point is caused by the child's attempting to do parts of singing which would fit in better with the developed larynx of the adult.

The human voice is like stone in the hands of the sculptor. The harmonious models which one beholds in going through a museum containing works of art are there chiefly because the sculptors knew how to perfect form. So, too, in the art of music. The successful singer or speaker knows exactly not only how to bring about quality in voice but how much of a load he can carry without straining that quality. For if one applies the wrong amplitude for a given intensity, a trembling effect takes place; this is discouraging both to the singer and to the audience. Some writers speak of the trembling as a tetanic constriction of the voice.

The voice goes through two compartments, the upper and the lower. The clavicle or collar bone is the dividing line. In the musical world these compartments are referred to as the upper and lower registers. Whistling or whispering requires little muscular action, and for this the upper register would suffice. On the other hand, when the muscles of the chest and diaphragm are used, the lower register is invoked. The larynx remains the clearing station for both the upper and the lower registers. A fallacious notion is prevalent that the registers should be changed when the pitch is low, with the result that often there is a clash in the registration of the voice, bringing about a mixed registration, which is the creative force of harsh tones. Not infrequently a singer will use entirely the upper register and often will fall back on the lower register, with the result that an incongruous mixture takes place which partially destroys the effects of the voice. This explains why some of the artists fail to make progress and fall by the wayside.

One must keep clearly in mind that the upper register generates high tones with clear bell-like pitch. The lower register creates low harsh tones. A singer must learn how to isolate these two registers. When he knows the isolation and the control of the registers, the blending of the registers is a natural thing. Under these circumstances, when a singer has mastered the control of the registers he is capable of producing a greater vocal range. Otherwise, the mixed registration will inevitably lead to de-

struction of from five to eight tones in one's vocal range. The "blues" singers whom one hears over the radio use the lower register entirely. The effect of poor quality of the voice is heard a great deal over the radio. Most women rely entirely on the transmission of musical sounds on the upper register; they will shrink from developing the lower register because the lower register, if properly developed, has a tendency to enlarge the abdominal girth, and women singers do not regard this condition as fashionable. Another error which is ascribed to the women singers is that they overlook the fact that the extrinsic muscles of the larynx, such as the muscles of the neck, are just as important as the intrinsic muscles of the larynx. To be able to carry a tone that would be complete, that is, full of volume and sustaining quality, one must have neck muscles as well developed as the intrinsic muscles of the larynx. Women naturally feel that this would rob them of a great deal of grace. As a matter of fact, they sacrifice their voices by refusing to exercise a group of muscles which is ever essential to good singing. One can see this with striking effect on the silver screen, where actresses retain their graceful necks at the expense of a singing or speaking part.

Forty—Looking Forward

(*Continued from page 685*)

inflation, because he knows that one inevitably follows the other. Every man past 40, then, should formulate a plan for living so that he may enjoy the prestige his mature judgment brings him and so that he may help guide those with less experience.

After a man has a plan for his work, he can proceed with it, assured of the best results. Because the man past 40 begins to tire more easily, he must check on the amount of time actually devoted to work. A fair estimate would be from 10 hours a day, gradually dropping down to complete freedom from work by cutting down one hour for each five-year period between 40 and 90. When working, he should remember to keep on the job so that he may have as much leisure away from his business as possible. All work is not physical, and he who spends half an hour planning and thereby saves a minute a day and secures high grade results is really working.

The man past 40 must learn not to expect every finished piece of work to be perfect but to evaluate progress in monthly or yearly periods. In slack times he may plan and prepare for busy times so that the amount of energy used may be equalized. He must learn to train employees to do the heavier work so that he will do less manual labor and more managing as the years add themselves to the score. When some one else proves to be more capable, he must be big enough to realize he is elevating himself by admitting it to the world and by turning the job over to that person. If that more capable man is a competitor, he must admit the superior methods by copying them and, if possible, by improving on them rather than by waging a weakening battle against changing methods and newer ways.

Constructive thinking and analyzing are not worry but work. Worry is the wasting of time and mental energy by failure to analyze the situation constructively and act on that analysis. What is needed is more work and less worry.

When the working hours have passed and the time for relaxation has come, he must leave all work and thoughts of work behind him. Merely transferring his problems from the office or the field to the home is not enough. He must develop a hobby, for in later life a hobby is as great a pleasure as a new bicycle is to a boy. For the man with an indoor vocation, walking, while quite out of date at present, is a splendid muscular exercise. He may go alone or with a friend, but in either case walking provides fresh air and furnishes a view of the ever changing seasons in the playhouse of Nature. The active outdoor man may choose to do more reading or develop more interest in public affairs. But soon after his fortieth birthday, each person should begin to develop some hobby as an insurance against the hours of nothing to do, when strength is gone.

More sleep is required in the years past 40. The best insurance for a good night's sleep is a day well spent and a tomorrow that holds unknown but anticipated treasure.

The man of advancing years must guard against increasing weight, but again this is a matter to be decided in each case. Neatness and cleanliness are just as important in the later years of life as in the courting days; untidiness must be guarded against by all. The diet must be adjusted, of course, to the needs of the individual.

But most important of all, the man of 40 should look forward to the remainder of his life with anticipation instead of looking back on the past with regret. Again, if his mature years are planned carefully, why should he not supplant the oracles of old with the wisdom of ripe experience?

Progress in Preventive Medicine

By P. M. Ashburn

PART VI

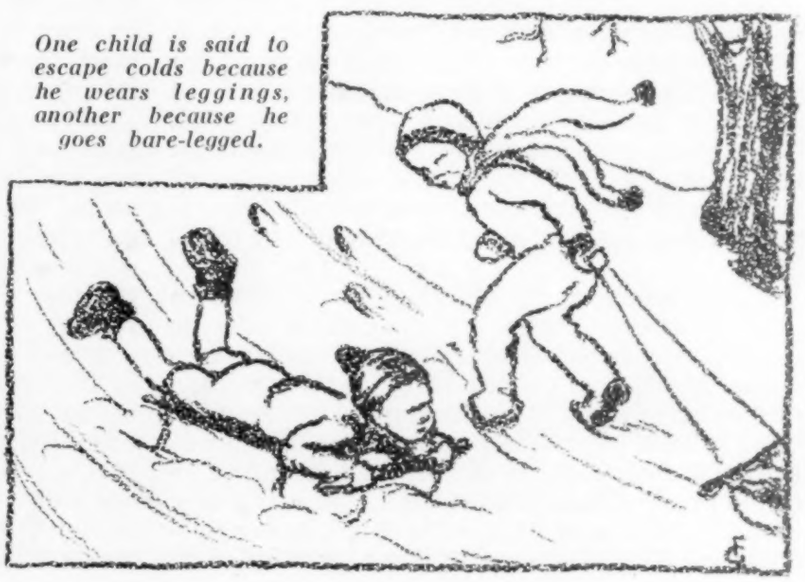
MANY OF THE MOST common and some of the most deadly diseases of mankind gain access to the body by way of the respiratory tract and localize therein. Some of them usually remain limited to that tract and others commonly spread through the whole system, causing generalized symptoms. Among these diseases are tuberculosis, pneumonia, the common cold, tonsillitis, influenza, pulmonic plague, diphtheria, probably measles, smallpox, scarlet fever and meningitis.

For some of them, preventive measures have been established. Knowledge, demonstrated by experiment, justifies popular education as to the protective measures, and in such cases the measures have been successful and the diseases are being conquered. Regarding others, notably influenza and the common cold, we physicians still must "philosophize" as did our forefathers in regard to malaria and yellow fever. We believe we know how to prevent them and how they must be transmitted, and we tell how to avoid them; but the results are so unsatisfactory as not to prove us right and to compel the admission that possibly we are overlooking some necessary factor, just as mosquitoes were overlooked for so long. Such a factor, if found, may prove as obvious and simple as the mosquito, or it may be related to the complex chemical process going on in the body. However much we speculate in regard to such a factor or factors, an attempt should not be made to emphasize popular education in regard to them until more facts are known. It is well that we do what we think is right, but let us always keep in mind that we are not wholly sure of our ground, and let us avoid dogmatism. Instead, let us study, observe and experiment.

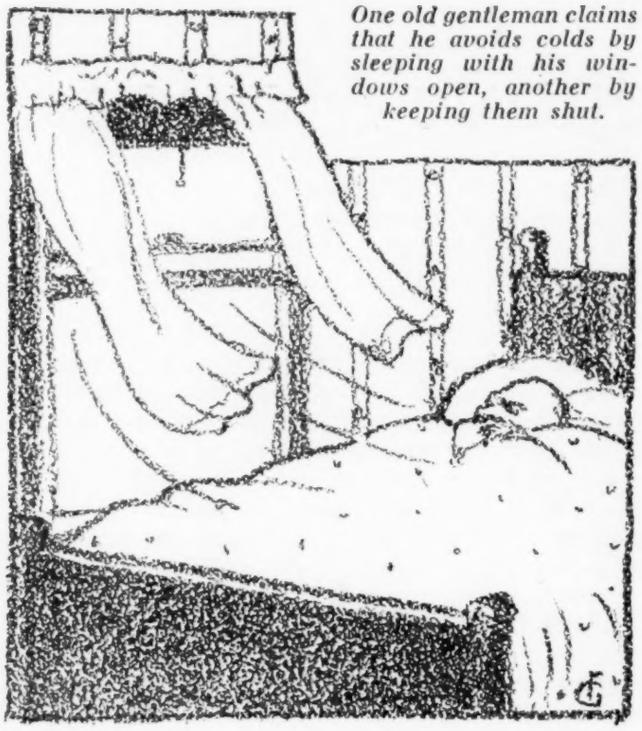
Influenza and the common cold are clinically preeminent examples of respiratory diseases. Their localization is in the respiratory organs; their symptoms relate mainly to those organs, and they would seem to be preeminently the diseases spread (1) by fine droplets of sputum or mucus given off in sneezing or coughing, (2) by contamination of hands, handkerchiefs or utensils by such droplets or (3) by coarser mucus. Yet as recently as the World War, influenza swept over the entire world, infecting a large part of the population in the most diverse parts and killing millions of people; and we were as helpless to prevent it as the Romans were to prevent the Justinian plague or as the Indians were to prevent the smallpox which the Spaniards carried to them. Scientific men all over the world studied this great epidemic but could not agree as to its cause or the reason for its great extension. The cold, high parts of northern India and Afghanistan probably suffered more severely than any other part of the world, but in tropical Samoa the disease killed 7,264 of a population of 36,405. In the United States it caused some 500,000 deaths.

People were advised and educated to avoid crowds, fatigue and chill, to exercise the greatest care to cough or sneeze only into handkerchiefs, to sterilize their dishes carefully, to wash the hands frequently, to wear masks, to do all the things that would prevent infection by droplets or contamination with mucus from the nose or throat. In general, these measures were without effect.

Even more surprising were certain experiments carried out by such careful investigators as Dr. M. J. Rosenau, professor of preventive medicine and hygiene in Harvard Medical School, and Dr. George W. McCoy, director of the National Institute of Health of the Public Health Service. Working with volunteers from



One child is said to escape colds because he wears leggings, another because he goes bare-legged.



One old gentleman claims that he avoids colds by sleeping with his windows open, another by keeping them shut.

a segregated population at Gallop's Island, Boston Harbor, and using 100 healthy volunteers who had not had influenza, they tried to produce the disease by the following measures: (1) spraying the throats with Bacillus influenzae; (2) spraying with suspensions in normal salt solution of mucus and secretions from the noses and throats of persons having influenza; (3) instillation of 6 cubic centimeters of secretions into the eyes, nose and throat; (4) intravenous injection of blood from sick persons; (5) intravenous injection of filtered mucous secretion from the sick, and (6) having volunteers talk for some minutes with sick persons, approaching them as closely as possible and shaking hands with them. The sick persons then breathed five times and coughed five times into the faces of the volunteers.

As reported by Dr. Rosenau in *The Journal of the American Medical Association,* Aug. 2, 1919, all these experiments resulted in complete failure to transmit influenza. Streptococcal inflammations of the throat were transmitted, but influenza was not. So, however much we think we know of the method of extension of influenza, we must admit that our knowledge is not too firmly founded or confirmed by experiment.

There was also at that time much effort in some quarters, mainly commercial, to educate people to the use of so-called preventive vaccines. Dr. McCoy made a study of this question and concluded in *The Journal,* Aug. 9, 1919: "The general impression gained from the uncontrolled use of vaccines is that they are of value in the prevention of influenza; but in every case in which vaccines have been tried under perfectly controlled conditions, they have failed to influence in a definite manner either the morbidity or the mortality."

Generally speaking, no more is known now concerning the prevention of influenza than was known during the World War or in 1890, when there was another pandemic; and there is no assurance that, if the disease again started in ten or twenty years from now with a new generation on the scene, it would not work as great havoc as at those times. In regard to influenza, humility becomes us greatly, and it is little less so in regard to the common cold.

Many persons go for years without a cold, but most of us have from one to four or five in the course of a year. The fortunate ones who escape often tell why and how they do so. One says that it is because he takes a cold bath every morning, another because he takes only hot baths. One says that it is because he greases his nose with petrolatum every night, another because he snuffs salt water. One attributes his good fortune to the fact that he never uses woolen underwear, another to his constant use of it and a third to the fact that he wears it during working hours but changes to cotton shorts in the evening. One child escapes because his mother is careful not to let him go out without leggings, another because he goes bare-legged in all sorts of weather. One old gentleman avoids colds because he sleeps with all his windows open, and another because he shuts and seals all of his. And the doctor who perhaps has four colds a year will give advice less assuring than any of these lucky ones and better worth following in most instances, despite his unfortunate personal experience. For it seems probable that there are concerned in colds such various matters as the infective germ, the opportunities to obtain the infection, the condition of the respiratory mucous membrane at the time of infection, and the question of bodily resistance as affected by age, strength, fatigue, ability to mobilize white blood cells quickly and to elaborate antibodies against the special germs concerned. The hard-working doctor, tired, cold, short of sleep, and frequently exposed to infection, may fare the worse for these reasons.

Let us all walk humbly in the presence of the cold and admit that present knowledge does not justify great boasting. But, until we learn more, we are justified in avoiding chilling, especially wet chill, in enjoying fresh air without drafts, in dressing for comfort, in keeping the feet dry, in avoiding contact with persons having colds, in avoiding the common drinking cup and the other fellow's handkerchiefs, and in so conducting ourselves when we have colds as not to transmit them to others by sneezing, coughing, spitting, or otherwise distributing germs. One thing may be said of colds with certainty; they nearly always come from other persons. Arctic explorers subjected to cold, wetness and hardship are free from colds until

they return to civilization and crowds. It is safe to teach avoidance of contact with colds.

One proved cause of colds is a filtrable virus, a form of germ not visible with the microscope, but the trouble that the virus starts may be aggravated, complicated and prolonged by other germs, and these may spread to the ear, the nasal sinuses or the lower respiratory organs and set up serious troubles there. The best way to prevent these conditions is to give up to the cold promptly and to go to bed or at least to stay at home. This is good for the cold and good for the community. It is especially good for the community or school if the "cold," as often happens, is the early stage of measles, meningitis, whooping cough or other trouble. What may then happen is illustrated by the following history reported in Kansas a few years ago:

"A farmer and stockman from the little town of *A* went to Kansas City with a carload of cattle. Nine days later he had a bad cold. He spent two days wandering from store to store in the little town telling his friends what a fearful thing his cold was. On the third day the eruption occurred, and his physician tacked up a measles sign on the house. But it was too late. Two weeks later 28 of his friends who had listened sympathetically to his 'cold' troubles also had measles. In two weeks more 28 other cases resulted, and two weeks later 30 cases—86 in all. That, being nearly the entire population of the town, ended the epidemic in that community. But of the first crop of 28 cases at *A*, one visited the home of a physician in the city of *B*. The physician, not knowing his child was exposed, permitted its attendance at school regularly, and the child 'broke out' in school. From this child it spread to 43 families, or 90 cases. A visitor from the city of *C* in the town of *A* came home, attended the city schools of *C*, and the disease spread to over 100 cases there. During the county examinations held in *C* and at the height of the epidemic there, a pupil from the city schools of *D* was exposed to the infection. In spite of this knowledge this pupil did not cease school attendance, and thirty cases resulted in *D*."

Whether or not measles is more contagious than colds is rather difficult to say. There are always more ordinary colds than cases of measles, but that is largely due to the fact that an individual may have many colds in his lifetime, whereas one rarely has measles a second time. One attack usually confers lifelong immunity thereafter, although second attacks are less rare than after smallpox or scarlet fever. Less than 5 per cent of patients who have measles seem to have had a previous attack. Measles is one of the most contagious diseases known, ranking in this respect with smallpox and influenza. Few persons are naturally immune to it; in consequence, it flares up in epidemic form every few years, as a new crop of children becomes available to furnish the fuel. Many children escape the disease when small, because they can then more easily be kept from contact with other cases, and they furnish the material for epidemics in schools and military stations.

Measles is not in itself a dangerous disease. Although the mortality in camp epidemics may be high, 95 per cent of the deaths are due to secondary infections and complications, especially bronchopneumonia. If these can be prevented, as they usually can in children treated at home and isolated from other sick persons, the disease is short lived and usually mild, and the resulting immunity is a valuable acquisition. For this reason many persons do not exercise great care to prevent their children from getting the disease, and some go even further and, somewhat like those who before Jenner's day had their children inoculated with smallpox, prefer to expose their children to measles while they are in early childhood, at home and in good general health. There is always a certain, or rather an uncertain, amount of risk with measles, and one is scarcely justified in subjecting a child to it knowingly. The risk is greater if the child has any other infection, such as tonsillitis, a running ear or enlarged glands. However, many hundreds of young men died in military camps in the World War who would probably have survived had they had measles in childhood.

As the incubation period of measles is nearly always fourteen days, it is sometimes a safe practice for schools to go on as usual for a week or ten days after the appearance of a first case and after that period to isolate at once any child having a cough, fever or running nose or

Arctic explorers subjected to cold, wetness and hardships are free from colds until they return to civilization and crowds.

eyes, thus getting the secondary cases at the earliest date possible. Parents also should particularly watch their exposed children at that time.

There can be no question as to the advisability of guarding a child with measles from complicating infections of all sorts; this may be done by early isolation from other children and other sick persons, by rest in bed as long as there is any cough, fever or eruption and by good medical treatment and supervision. Education as to these facts offers the best method for reducing mortality and insuring light attacks. Injections of blood or serum from persons recently recovered from measles are of use in preventing measles and can be resorted to for the protection of sickly children who have been exposed. They are also useful in mitigating the severity of attacks, and in this respect also they find their best use in the otherwise sickly child.

The measles virus soon dies out in the patient. There are no chronic carriers of this disease as of scarlatina, diphtheria and typhoid. The disease is most contagious in its early stages, and when a patient recovers he is no longer a source of danger to others.

Measles is one of the considerable group of diseases which is spoken of collectively as "the contagious diseases of childhood," although all ages may suffer from them and they are diseases of childhood mainly because children have not previously been exposed to them and have not had the opportunity to develop immunity through attack. Measles, for example, is a disease of childhood in exactly the same way that smallpox used to be, and the adult who has not had measles is just as liable to acquire it as is a child. The same is true of German measles, mumps, chickenpox, whooping cough and scarlet fever, although none of these is so contagious or so common as measles is or as smallpox was before vaccination. In regard to all these diseases, there may exist a temporary immunity, the nature and cause of which is unknown. A child may be exposed to measles without getting it but may acquire it later from another source. A boy who was isolated and most intimately associated with his brother while the latter went through an unusually severe case of chickenpox, did not acquire it; nevertheless, years later, as a young man, he acquired a severe attack himself after an exposure which was fleeting and not close. Could one know when this immunity exists, one might take advantage of it to inoculate the diseases and obtain light and helpful forms of the disease. Unhappily, this is not known.

German measles is a milder disease than measles and not nearly so liable to result in severe complications. It is less highly contagious and is for these reasons less feared than measles. The methods of spread and the preventive measures are the same for the two diseases. German measles may resemble mild measles or mild scarlet fever and may be mistaken for either. Such mistakes may be responsible for a good many reports of secondary attacks of these other diseases.

Scarlatina, or scarlet fever, is a disease which a generation or two ago was feared as one of the most deadly menaces of childhood, whereas of late years, even during the World War, it has been relatively rare and much milder, and has caused little mortality among the infected persons. Without known cause, it varies greatly in severity at different times and places. However, its possibilities for harm are so great that it should always be regarded with great respect and treated with great care. The causative organism is apparently a special streptococcus; susceptibility tests, diagnostic tests and immunizing procedures based on work with it seem to give specific results. The disease is transmitted usually through close contact with another case but occasionally by means of such inanimate objects as clothing or toys. It may be milk-borne; epidemics have resulted from infected milk supplies. It is not nearly so contagious as measles, and susceptibility to it is not nearly so universal. The cases are consequently much less numerous, despite the fact that this disease has its healthy carriers who may be sources of danger over prolonged periods, while measles is transmissible for only a few days.

The carriers of scarlatina may be persons who have not been sick, others who have had a slight sore throat and recovered, or those who have had the disease and have recovered but have been left with a nasal discharge, a running ear or some other pus infection, such as an empyema. For this reason, persons in contact with cases of scarlet fever should exercise great care to avoid contact with susceptible persons, especially children, while that contact is continuing. Scarlet fever patients should be isolated until free from all complications of a suppurative nature. While it is doubtful that the scales shed from the skin are infectious, it is just as well to regard them as being so. As the ordinary period of quarantine for this disease is six weeks and as the desquamation is usually completed within that time, such an attitude is not a hardship.

Scarlatina is a disease of dangerous potentialities and one to be carefully avoided, treated and quarantined. On the basis of the experience of recent years it is not now so dangerous a disease as in former years, and its presence should not terrorize the family. It is not so common that attempts at artificial immunization of all children are at present justified. In the presence of an epidemic or where there has recently been or threatens to be one, such measures may be indicated for the given locality.

[NOTE.—In the September issue, Dr. Ashburn will discuss other respiratory diseases.]

With pomp and circumstance, Gwendolyn Chadwick and Albert Meagher were chosen queen and king of Babyland in Los Angeles. The selection was based on health.

Centuries ago, Ikhnaton, an Egyptian ruler, bade his people to worship the sun. The bas relief below is evidence of this original movement, which was conducted from a religious rather than from a scientific point of view.

Today even the little children are "sun worshipers," for education in health has taught many of them the curative value of the sun's rays. These children are "temporary residents" of St. Thomas Hospital, London.

Boys and girls of Long Beach, Calif., are having great fun riding a new form of sea horse at the speedy aquatic horse races held along the coast. Hang on tight, young man!

Photos by Keystone View Company

The Red Wagon Wheel

By

Ethel J. Eldridge

By late afternoon, Joe and Bill had made a fine red clay house.

ONE MORNING, soon after breakfast, when Bill and Joe were playing in the garage, Bill said to his older brother, "Come on, Joe, let's fix that loose wheel on your red wagon."

"Not now, Bill," Joe answered, "I want to finish polishing my roller skates the next job I do."

"But, Joe, we ought to do it," Bill insisted; "we use that wagon so much."

"Oh, well, it doesn't matter. The wheel is pretty good yet. It's only a little loose. I'm going over to the creek and get some clay. Want to come along?"

"What are you going to do at the creek, Joe?" Bill asked eagerly. He was always anxious to do things with Joe, because they were sure to be interesting.

"I'm going to get a big bucket of clay and make a house out of it, if I can."

"Make a house?" Bill laughed at the idea. "How can you make a house out of that?"

"Well, it's sticky when I get it wet out of the creek bed, and it hardens when it dries. I don't see anything so funny," Joe said resentfully. "Uncle James says down south in Mexico he saw houses made out of adobe—that's a lot like clay—and I believe I can make one out of creek clay and paint it."

Bill decided that it sounded entertaining and that he would like to help.

"You bring the red wagon up to the house," Joe directed, "and I'll get a scrub bucket from mother."

Joe went whistling to the house for the bucket while Bill pulled the wagon up the walk to the steps.

When Joe put the bucket in the wagon, Bill said, "Say, that wheel is all wobbly. Do you think it will make the trip to the creek and back without coming off?"

"Aw, of course it will," Joe assured him, "don't always be afraid something is going to happen. We'll fix it when we come back."

The boys had a jolly time on their trip to the creek, taking turns riding and pulling each other in the wagon.

When they reached the shallow stream, they took off their shoes and stockings and filled the bucket full of the soft red clay that lay underneath the water. It was heavy, and they both held the bucket handle as they lifted it into the wagon.

The trip home had to be made carefully, avoiding ruts and rough spots because of the loose wheel.

All day the boys were busy working with the clay, and by late afternoon they had constructed quite a good house.

The sunshine hardened and baked the clay as they put one story on another; then they cut square holes for doors and windows. They felt quite proud of their home-made Mexican adobe house.

But Joe had forgotten all about his promise to fix the wagon wheel.

Mother came out to admire the house and said, "Children, you must go now for the clean

clothes. You'll have just about time to make the trip before supper if you go immediately and hurry on the way."

She started up the walk, then turned back to say, "Come to the house for the money. Mrs. Carter phoned me that the clothes are folded and in the basket ready for you. You'd better go right away, and don't stop anywhere coming home."

Bill was worried. "I tell you, Joe, we ought to fix that wheel before we use the wagon to get the clothes."

"You're a regular old fraid cat, Bill," Joe said tauntingly. "One thing sure, we haven't time to fix it now; and we went to the creek and back when you thought we couldn't."

"All right then, but we'd better not ride in it," Bill advised; he was uneasy.

On the way to Mrs. Carter's the boys pulled the wagon carefully over the cement walk and partly lifted it at the crossing; every jolt seemed to loosen the weak wheel more.

Returning with the heavy basket of clothes, they both pulled the wagon, watching for the bumps.

Suddenly at a street crossing the loose wheel gave a quick turn and flew completely out from under the wagon, upsetting it with a flop. It turned the basket of clean laundry upside down into the dirt of the gutter. Not satisfied with that mischief, the whirling wheel, as it bounced, hit Joe on the ankle. He lost his balance and fell face downward on the coping of the sidewalk. He lay still.

Bill gave a cry and bent anxiously over his brother. He saw a red stain spreading on the cement.

"Oh! Joe," he cried, "what's the matter?"

Joe did not speak or move, and Bill's teeth began to chatter. With all his strength he turned Joe over; he found his nose was bleeding, and a big bump was rising on his forehead.

Joe's eyes did not open, and Bill shook him frantically.

"What happened?" Joe finally asked in a dazed way, as he sat up and rubbed his head. "My nose is bleeding, isn't it?"

"Yes, don't you remember?" Bill answered in a shaky voice. "You fell over the wagon wheel and hit your head."

"Get me something to wipe my nose, and hurry!" Joe said. Then he saw the clothes upset in the dirt. "Bill, give me a towel," he continued, "and don't be scared; I'm all right."

Bill tossed the clothes about until he found a towel; Joe cleaned his face with it. By then his nose had stopped bleeding but was exceedingly sore. The lump on his head was swelling fast.

"Guess I'd better get home, Bill, but we can't leave the things here." Joe tried to grin as he spoke.

"You stay here with the clothes, and I'll go get somebody to come," Bill suggested, ready to leave.

"That'll be all right, but hurry up," Joe answered, rubbing his head where the big lump was on his forehead. "Dad'll be home for supper by now."

Joe did not have long to wait. Dad and Bill were soon there, and in a little while, Joe, the pile of fresh clothes now soiled and mussed, and the broken wagon were all in the car on their way home.

"Listen, Dad, it's all my fault. I knew that wagon wheel was loose," Joe confessed. "Bill wanted to fix it, but I wouldn't bother, and I laughed at him. But believe me, Dad," he continued, drawing a long breath, "I'll mend that wheel the first thing tomorrow morning. We'll never ride again on red wagons or skates or bicycles or anything, unless all the wheels are on good and tight; and after this, when things need fixing I'll do it at the right time!"

Returning with the heavy basket of clothes, they pulled the wagon carefully; yet every jolt seemed to loosen the weak wheel more.

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Teaching Nutrition in the Grades

PROBLEMS of nutrition are now in the foreground. This situation is due to a number of causes. First of all, scientific investigation within the last decade or so has shown the tremendous importance of food in relation to health. The stories of the discoveries in this field read like fairy tales. They have practically revolutionized our ideas on child hygiene. The general public and the schools have been quick to sense the significance of the newer conceptions of nutrition. This has been reflected in magazine and newspaper articles, in radio broadcasts and in health education activities of all kinds. The editor of this department has found that the manuscripts dealing with nutrition that have been submitted and published under the section "Teaching Health" have been greater in number than those on any other subject.

Teachers are sensing the need of help in giving instruction and training in nutrition. This was indicated in a recent investigation in a large school system. The school principals of that system were asked at a health conference to list the health problems in their schools in which they needed help. Every principal had food and nutrition on the list. Fortunately at this time, students in normal schools and colleges are getting a better training in nutrition than formerly; then, too, many helpful books on the subject both for teachers and for children are steadily coming from the press.

In most of the school systems the problem of nutrition has not yet been attacked in a satisfactory manner. Since many pupils in the public schools will not go beyond the eighth grade, the fundamentals of nutrition should be taught before that time. This is especially true of pupils in rural schools, many of whom will never go to any higher school. Even in the city schools there is need of stressing instruction and training in nutrition. Most of the textbooks for the grades are so general in character that there is little space for foods. In the best schools the girls have a course in domestic science, which is denied to the boys, although in a few schools it is being taught under the guise of camp cooking. In many junior high schools, hygiene is not taught as a separate subject but is brought into the program of studies incidentally through general science. The great mass of high school students are not required to take hygiene. Invariably students who are in the college preparatory classes are too busy in their study of ancient history, mathematics and language to consider such matters as health. It is the exceptional high school student who gets a substantial course in physiology and hygiene in the high school. Whether this condition is likely to change in the future as more and more emphasis is put on the fundamentals of education is still open to question. But since so many pupils never get into high school and since the problem of nutrition is of such vital importance, many elementary school principals are calling for more systematic plans of instruction in the grades.

In some of the best schools today, something about food is taught in every grade. Children get their information in part from books and from the talks of teachers. In many cases they get their best training by being taught through the school lunch how to choose a nutritious and well balanced meal. Through weighing and measuring, children and teachers also become interested in growth and observe it in relation to food, sleep, rest and health habits.

How to buy foods most economically and how to choose foods which will help children to grow and be healthy are major health problems which are receiving more and more attention by parents, social workers and teachers during this period of depression. The best elementary schools are seeking the cooperation of children through tactful instruction.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

THE SENIOR HIGH SCHOOL TEACHER OBSERVES HER PUPILS

AN AVERAGE senior high school class is in session. At the first glance one sees bright, eager, shining faces, but in looking closer one notices that Johnny is slouching in his seat, mouth agape, eyes vacant. Tom has been called on to recite. He rises and clumps, heavy footed, to the blackboard. Joe rubs his red eyes and puckers his face into a vicious scowl in the effort to see better. Albert stares at the teacher stupidly when she asks a question, and he stutters in reply. The teacher is patient but tired from a day liberally sprinkled with other Johnnies and Toms and Joes. Some children giggle when they are asked a question; others grow sullen or shy. The teacher sighs and continues.

Is this, then, all part of the teacher's necessary cross? Are Johnny and Tom and Joe doomed to mumble and shamble sullenly forever? Not at all. At home, where there are not forty other children in the room with whom to compare him, Tom seems no more than normally boy-clumsy. Doting parents smile indulgently and say,

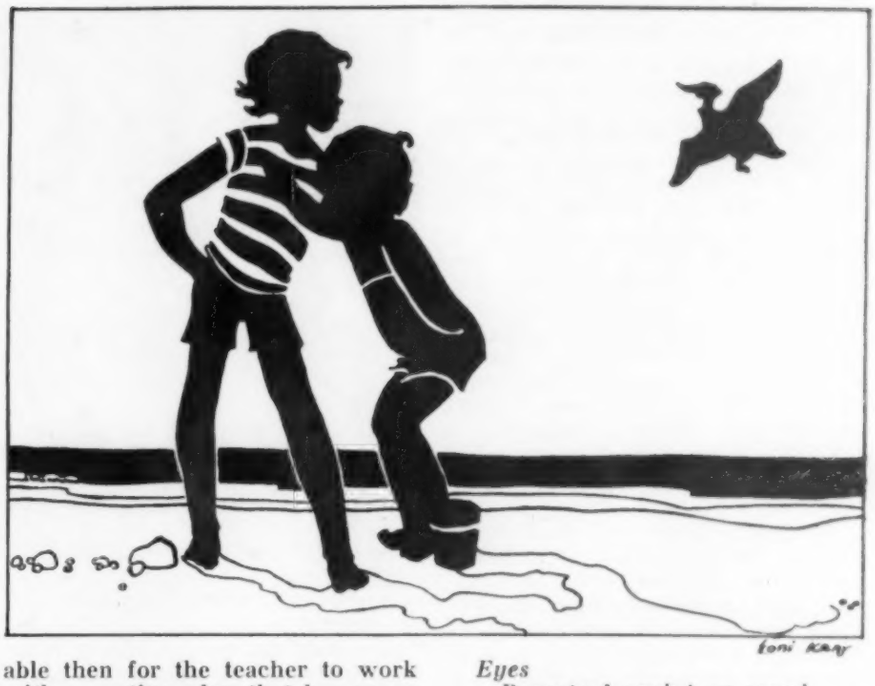
"He'll grow out of it." Perhaps he will. The chances are that he will not without some skilful aid. And unless the teacher lets Tom's mother know that other boys do not walk so heavily normally, Tom will probably not get any help until the time for it is past, and he is doomed to clump with flat feet for life. Perhaps Joe's mother knows that boys' eyes should not be red. Perhaps she is irritated by his perpetual scowl. But what can she do about it? Joe's father is out of work, and the revenue derived from day-to-day char work does not lend itself to medical examinations. He'll "get over it." But he will not. If, however, the teacher speaks to the person in charge of child welfare or to the school health council, immediately Joe receives medical attention. His eyes heal. His work improves and so does the teacher's attitude.

So constantly the burden of alertness is on the individual teacher. She has the advantage of daily contact with each child in a group setting. Therefore it is she who can best pick out the divergence from the normal. It is she who has contact with both the individual child and the school health organization, which in turn contacts remedial agencies. Therefore it is she who can best join the child who needs help with the agency eager to give it. It is not too much to say that the teacher occupies the pivotal position in the school health situation.

"But," I can hear the exasperated chorus, "we have already so much to do. How can we possibly keep on instructing them if we are to act as nursemaids? It is our job to give them a certain amount of knowledge every term, not to watch their running noses." I might reply that you cannot give them the knowledge until you have cleared up the nose, but there is no need to imply that the two operations cannot be simultaneous. The teacher need only fix in mind firmly the vantage points from which to watch the children and what to observe. The observations need not take any time from the teaching. They mean merely real alertness directed toward benefiting the children.

When she enters the teaching field, the teacher solemnly pledges the use of her faculties in the service of youth. Realizing this, she cannot shirk her part in the world's responsibility for the physical well being of its young. Herein lie the roots of wheat and of tares, and the proficient yeoman knows that the one cannot be lusty unless the other is first uprooted.

One of the best times for observation of every individual in the class is the period in which written work is being given. It is advisable then for the teacher to work with a seating plan that has space for notes, with the list of defects penciled in at the top. For example, for the initial scrutiny, I suggest the following list:



Eyes
- Position of the head—6 inches from the paper or 2 feet away?
- Possibility of nearsightedness or of far sightedness.
- Redness or discharge of eyes.
- Heavy eyes.
- Bulging eyeballs accompanied by undue fulness of the neck exophthalmic goiter).

Ears
- Cotton worn in ears.
- Discharge from the ears.

Adenoids and tonsils
- Inability to breathe through the nose.
- Narrow upper jaw and irregular crowding of the teeth.

Teeth
- Visible decayed spots.
- Notched edges on teeth, indicating malnutrition.

Spinal curvature
- One shoulder higher than the other.
- Crooked position when writing.

Round shoulders

Infections

Acne

Extreme pallor

The foregoing items are each to be checked at the time of observation. Paralleling them, I suggest another list to be used after the initial check has been made. Now let the teacher sit back and consider each pupil thoughtfully, bringing to mind everything she can remember about him. In this process the following list will be found useful. Note that here the items are such as are to be observed during a more extended period of time and contact:

Eyes
- Perpetual squint or scowl.
- Peculiar misspellings of words, such as the transposition of syllables and letters.

Ears
- Habitual misunderstanding of questions.

Adenoids and tonsils
- Frequent colds and nosebleeds.
- Poor circulation.
- Deafness.
- Nervousness.
- Bad breath.

Teeth
- Habitual bad breath.
- Complaint of toothache.

Persistent cough

Apparent stupidities

Thorough as these two lists may seem, they do not cover the whole ground. Supplementing these procedures the teacher must complete her survey by observing the pupils carefully as they come into the room. The items to be checked here are fewer, but important; they include crooked position when walking, unusually heavy tread and undue shortness of breath and blue lips after exertion.

Active note-taking in the short time between classes will round out the complete health report for the class. All that is left for the teacher to do is to submit her notes to the persons in direct contact with remedial agencies and to recheck in about a month for signs of improvement. If she retains her first chart, the work of comparison is brief and valuable for it provides a means of follow-up on the initial observations. The only extra time demanded of the teacher is that required for the first drawing up of the seating charts, and that can be delegated to a student helper.

Ruth E. Shuchowsky,
New York City.

A CLEAN-UP PROJECT IN A RURAL SCHOOL

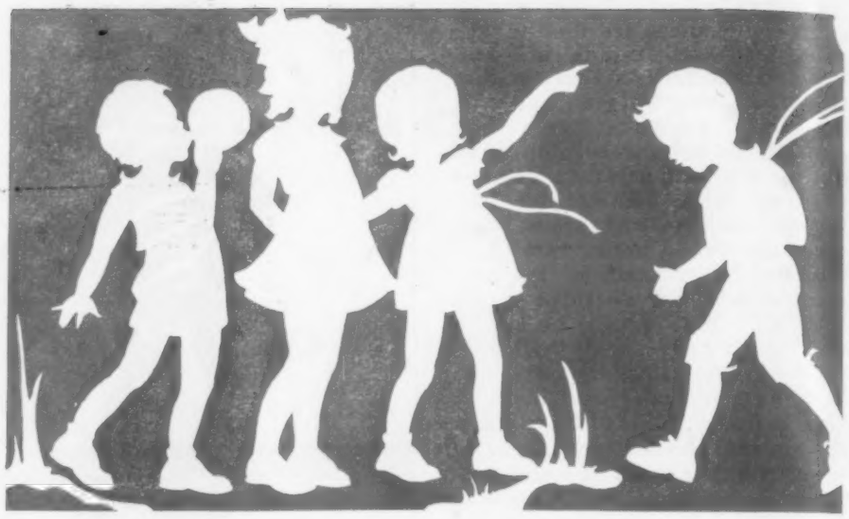
AFTER several weeks of intensive study, reading and actual demonstration of personal cleanliness, a third and fourth grade group of rural school children decided they were being helped a great deal personally, but they were anxious to see what they, as a group, could do to improve the health conditions throughout the entire school.

After several days of discussion and study of the situation, a survey of the school was made and an outline of the project was begun, including the following points:

1. The children made a survey of the classroom under my supervision.
2. They recorded practical and possible things which they could do to improve the room.
3. They tabulated these suggestions and eliminated duplicates.
4. The practical and possible things were done as recorded from the children's suggestions.
5. The children made a survey of the school ground under my supervision.
6. They recorded practical and possible things which they could do to improve the playground.
7. Again they tabulated these suggestions and eliminated duplicates.
8. They accomplished what they could on the playgrounds as recorded from their own suggestions.
9. Each child made a survey of his own home to find what practical things he could do there to improve the health conditions.
10. Each child's suggestions were recorded separately.
11. Using the tentative form of the Illinois School-Health Appraisal, the children helped score the room and school.
12. A modified form of Gates-Strang Health Knowledge Test was given to the children in grades three and four.
13. The children's hearing was tested.
14. With the Candle Foot Meter, the light on each desk was tested and recorded.
15. A library for both the teachers and the children in health work was begun.
16. A standard for each classroom teacher to have in hand as a guide for the work in his room the next year was planned.

After the outline was completed, the group made suggestions which were compiled; then began the real work. A list of the things done in the room, according to the group's suggestions, follows:

1. Torn magazines were moved and others were straightened.
2. Old boxes and baskets were cleared away.



3. Rolled posters were straightened.
4. Pictures were sorted and put in folders.
5. Calendars were made for regular sweeping, dusting, washing of boards and keeping of flowers in the room.
6. Window boards were made and painted white.
7. Book shelves were labeled and cleared.
8. All materials were labeled.
9. Coal scuttles were kept in place.
10. Clean towels were brought regularly and kept neatly folded.
11. Lumber was put in a box in the corner.
12. Transoms were frosted.
13. The stove was painted.
14. A box was provided for the doll things.
15. A table was made for the gramophone and records.
16. A tin lunch box instead of a paper one was made for each child.
17. A box was made for the play equipment.
18. Sufficient shelves for the towels were made.
19. The awnings were repaired, and new cords were supplied.

The things actually done after the group's compiled suggestions are shown herewith for playground improvement:

1. Papers are kept off the grounds.
2. Broken glass has been picked up.
3. Bags of sand have replaced the rocks on the ball diamond.
4. The lower side of the playground has been built up by sod and rocks.
5. There is little mud under the see-saw since ashes are being emptied there.
6. A nail in the volley ball post holds the horse shoes.
7. A gravel and ash path is being made to the toilets.

From the school the children made a survey of their homes and later each one reported what he had done to improve health conditions there. Some of the things done are as follows:

1. Yards were cleaned.
2. Basements were cleaned out.
3. Windows were washed.
4. Tin cans were carried off.
5. The ditch was cleared out back of the house so water can run off.

By visits to the homes of the children I found that practically everything had been done which the children had suggested. Mothers reported much surprise and delight in the attitude and work of the children.

We began a health library which is still growing.

It was soon realized that there were numbers of things still needing to be done that could not be accomplished at the time. Some one suggested outlining a plan for next year. The following suggestions were given:

1. Physical examination for every one.
2. Daily inspection of some form.
3. Removal and hanging up of outer wraps.
4. Individual drinking cups.
5. Individual towels.
6. Liquid soap in can.
7. Handwashing before eating.
8. Tin lunch box that can be easily cleaned.
9. Hot lunch during four cold months.
10. Record of all absences and the cause.
11. Thermometer in every room and regular daily reading record kept.
12. Window boards for windows open at bottom.
13. Covered garbage can for food scraps.
14. Record of every accident on chart.
15. First aid box in every room or a common one for the school.

The entire group seems to be health conscious, and each day

more and more outcomes of this work are visible.

JEWEL NOLEN,
Clarksville, Tenn.

THE HEALTH HOUSE HELPS TO BUILD HEALTH HABITS

LET US hoist the beams for the framework of a sturdy health house. Since the development of health habits is more or less colorless to the child in the primary grades, the problem of discovering a more attractive means of motivating the desire for healthful living confronts the ingenious teacher.

A method of stimulating interest has been developed in the health program of my classroom through the construction of a health house. In making this house, a large cardboard box was used. The rooms were furnished by using good foods, tooth paste boxes, carved soap and cleansing tissue, to illustrate the importance of proper diet, fresh air, cleanliness and tidiness. The roof was divided into sections on which the names of the pupils were written. On each of these names a shingle was placed whenever a child had succeeded in keeping the health habits for a given period of time. The following health rules formed the basis for the contest:

1. Keep finger nails clean.
2. Keep body, face and hands clean.
3. Keep hair tidy.
4. Drink milk each day.
5. Drink plenty of water.
6. Play outdoors each day.
7. Sleep with windows open.
8. Bring a handkerchief to school each day.
9. Clean teeth at least twice daily.
10. Do all you can to prevent yourself and others from catching communicable diseases.

These rules are time-worn by frequent usage and are employed in daily classroom inspection in many schools, but the use of the health house as a new means of motivation has succeeded in arousing such enthusiasm that the development of good health habits has been a source of pleasure to the pupils. No child wanted to fail in doing his share in finishing the house by having his section remain uncovered; for if he had not contributed toward the completion of the house, this would indicate faulty construction also in his own "health house," his body.

And now will you walk into my parlor? Perhaps you will think that the furniture in my parlor is quite different from your own. Have you ever heard the tune "Tidy Hair" played on a piano, the keys of which are made from a comb? I think you will like my davenport, which is made from a tooth paste box, upholstered with restful pillows of cleansing pads outlined in blanket stitch and painted with a design of harmonizing color. On a cold winter evening you will enjoy sitting before the bran flakes box fireplace in the arm chair constructed from a medicinal carton. If you care to read a bit, the floor lamp, the base of which is made from soap and a stick of macaroni, will afford you light. On the floor is a rug made from a handkerchief.

If you have not eaten, perhaps you will like to come into the kitchen to watch the preparation of the evening meal. You will note the cleanliness of this room when you see the refrigerator, stove, sink and garbage can which are carved from spotless white soap. The tooth-brush broom is ever ready to catch the dirt that might possibly get into the kitchen. For healthful food you may go to the cupboard made of a rice cereal box.

When dinner is served in the dining room you will observe that the chairs are attractively designed from chocolate dessert boxes, and the table emphasizes cleanliness in the fact that it is covered with a soap wrapper. You will be cosy, for this room is heated by an upright stove which consists of a milk bottle with macaroni for a pipe.

Before you retire, you may want to take a warm bath in the bathroom, which is furnished with carved soap. The mat and the towel are cut from a turkish towel, and in the cellophane window are dainty curtains of cleansing tissue.

I am sure you will sleep soundly in the cosy bedroom, where you will find beds covered with spreads of cleansing tissue. In the corner of the room is a dressing table made from another cereal box. After sleeping with your windows open, you will enjoy arising when the clock strikes its seventh hour.

I hope you have had a pleasant time. You are invited to come again, for the doors of health house are ever open to those who wish to enter.

EVA NELSON,
Inkster, Mich.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

TWO veterans in the field of health education have collaborated to produce two books which are far removed from the potboiling type. "Personal Health" [1] and "Home and Community" [2] are intended to fit the needs of the junior high school. The subject matter has been organized into large units. Each unit is developed through experiments and other activities. The aim is to tell the pupils nothing that they can discover themselves. The exercises call for an application of what has been learned to the pupil's own individual and community life. Teachers' manuals accompany each text. The general plan of the books is excellent, but it is a serious question whether most grades corresponding to the junior high school level are prepared to undertake such experimental work as outlined. Some of the exercises are also questionable from a scientific and a hygienic point of view. In the present state of psychology it does not seem desirable to go so deeply into the details of the anatomy and physiology of the nervous system or try to teach pupils to discriminate sharply between habitual and instinctive acts. There is little of practical value to the students in mental health in the chapter on "Why Do People Behave As They Do?" which is found in the book entitled "Personal Health." These books if used by skilful teachers should be most helpful in arousing a scientific attitude toward health problems.

MOST parents and altogether too many teachers are prone to call a school "good" if the school machinery works smoothly, if pupils move promptly from their seats into the recitation benches, if there is a minimum of whispering or noise, and if pupils are constantly on the alert to detect errors on the part of their classmates. The supervisor too frequently observes the teacher to see how she teaches rather than to discover the way in which the children learn. The mental and emotional health of the teacher and children is usually disregarded.

1. By Gregg, F. M., and Rowell, H. G. Price, 84 cents. Pp. 321. New York: World Book Company, 1932.
2. By Gregg, F. M., and Rowell, H. G. Price, 76 cents. Pp. 258. New York: World Book Company, 1932.

Dr. Garry Myers in "Developing Personality in the Child at School" [3] condemns the machine aspects of modern schoolroom practice. That which is of greatest worth is to develop in the child wholesome attitudes and to guide him so well that he can better solve the problems that confront him. Dr. Myers pleads for an intelligent and sympathetic understanding of children. Teachers and parents need to recognize the learner's difficulties and place themselves in his place.

This is a stimulating book for both teachers and parents who would like to be real human beings and guide children in a human and effective way.

PERSONNEL work has to do with the guidance of the individual student. Some schools have personnel systems carefully worked out. Whether or not such a system exists, no teacher can be expected to be doing good work as a teacher who does not take a keen personal interest in understanding and guiding her pupils. Education is now seen as a problem of guiding the pupil through the difficulties that present themselves. Some of these problems will necessarily concern both physical and mental health.

Miss Ruth Strang has written a helpful book, "The Rôle of the Teacher in Personnel Work." [4] It will be of especial interest to those students and teachers who are engaged or hope to engage in organized personnel work, but it should be of value to all teachers, especially to those in the junior and senior high schools.

IN KEEPING with the tendency of the time to emphasize civic education, "The Health School on Wheels" [5] suggests a novel way to study community hygiene. In this story the children of a certain room in a school known as the Robert E. Lee School of the city of Brightville have many adventures in a big bus as they study the way their city keeps healthy. They visit schools, factories, departments of health, dairies, barber shops, restaurants, stores, parks and houses. Each chapter in the book is an article in the *Brightville Citizen*, written by Uncle Jim, a reporter. Although the material is written in story form, pains have been taken to make the text reliable. Everything that is observed exists in some city, so the authors maintain in the preface. The students will learn much about community hygiene by studying the text, but there are suggestions throughout the book for the pupils to study their own community whether it is the city, town or rural district. Although the book is devoted primarily to community hygiene, there is a general review of health habits and personal hygiene from the social point of view. "The Health School on Wheels" is intended for use in the upper grades of the elementary school.

DR. WILLIAM A. McCALL, professor of education, Teachers College, Columbia University, is performing a distinct service for teachers through the editing of the Teachers' Lesson Unit Series. It is not only inevitable that methods of teaching should change, but it is also a wholesome sign in modern education. One of the criticisms leveled at modern school instruction is that it is piecemeal, that in taking up a subject like wool, the child gets a little here and a little there but seldom if ever is able to get his information organized or to comprehend the subject as a whole. The series edited by Dr. McCall attempts not only to do this but to get units that have actually been developed by teachers and pupils.

The unit entitled "Shoes" [6] is a good example of the manner in which a unit may be handled. The children of a third grade had been making an extensive study of the various textiles used for clothing. One boy suggested that the only thing left for them to find out about was shoes. The others thought that this would be fun, and so the work was launched. First they set down all the questions about shoes that they wanted answered. The next thing to do was to get reliable information to answer these questions. This led to an exhibit of shoes, a study of old shoes, a trip to the shoemakers, the making of booklets, the obtaining and showing of lantern slides and the writing of a play. In this story the relation of the shoe to health is considered. An interesting bibliography for the children is found at the end.

It is not intended by the editor or authors that these units should be copied. They ought merely to be suggestive to teachers.

EVER SINCE the passing of the eighteenth amendment there has been a declining interest in the public school instruction on alcoholic liquors. During that time, however, there has been a decided improvement in health teaching throughout the country. Since instruction concerning alcohol is required by practically every state in the Union, this lack of interest is difficult to understand unless it was felt by the public and the mass of educators that such teaching was unnecessary. At any rate, within the last year the demand for such instruction has become more and more insistent, and the need of scientific facts in this field in which prejudices are more likely to be of influence than reason is keenly felt.

Therefore "Alcohol and Man," [7] edited by Dr. Haven Emerson, takes on unusual interest. Each chapter is written by a man who is an authority in his field. The book has not been written either to support or to attack the eighteenth amendment but to present scientific facts. The various contributors do not always agree, but they show little emotional bias. A careful reading of the book scarcely bears out the statement of the editor that there is a great need of rewriting courses of study in physiology and hygiene. It is true that revision may be necessary, but the revision does not need to be radical. A careful consideration of the facts fails to show that alcohol is a necessity for health or that its use fundamentally promotes health or happiness. It is still true that milk drinking would do more for the race than alcohol, a narcotic, which should be classed with drugs.

THE DAYS OF HEROES and heroines are not over. All one has to do is to start "Nurses on Horseback" [8] to realize that in the Kentucky mountains where the frontier nurses labor with joy and a love for humanity in their hearts, there are dreams and heroic deeds. With sympathy and appreciation for the frontier nurses, Ernest Poole has himself ridden the rounds among nursing centers, in a region of moonshiners and family feuds of former days. The book is as thrilling as fiction, and few readers will lay it down before finishing. It is filled with interesting information about a primitive land.

The frontier nurses, according to Ernest Poole, must have some of the dauntless spirit which the followers of Garibaldi had when they responded to his challenge: "What I have to offer you is fatigue, danger, struggle, with risk of death; the chill of the cold night in the free air, and heat under the burning sun; no lodgings, uncertain provisions, forced marches, dangerous outposts. Those who love humanity and their country may follow me!"

3. By Myers, Garry Cleveland, Ph.D. Price, $2.50. Pp. 375. New York: Greenberg, Publisher, Inc., 1931.

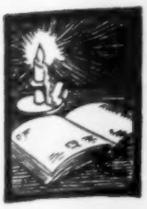
4. By Strang, R. M. Price, $2. Pp. 332. New York: Teachers College, Columbia University, 1932.

5. By Andress, J. Mace, Ph.D., and Goldberger, I. H., M.D. Pp. 400. Boston: Ginn and Company, 1933.

6. By Arey, Grace, and Brooks, Hazel. Price, 25 cents. New York: Bureau of Publications, Teachers College, Columbia University, 1932.

7. Edited by Emerson, Haven, M.D. Price, $3.50. Pp. 451. New York: The Macmillan Company, 1932.

8. By Ernest Poole. Price, $1.50. Pp. 168. New York: The Macmillan Company, 1932.



NEW BOOKS ON HEALTH

THE TIDES OF LIFE

By R. G. Hoskins, M.D. Cloth. Price, $3.50. Pp. 352. New York: W. W. Norton & Co., Inc., 1933.

OF ALL the fields of medicine the one being most actively cultivated today is probably the study of the glands of internal secretion. This particular branch of medicine is known as endocrinology. It is concerned with the chemical substances released into the blood by various glands, such as the thyroid, the pituitary, the suprarenals, the sex glands and other tissues and organs. Apparently the glands have remarkable powers in affecting human growth and health. They can make a human being a dwarf or a giant; they can make him fat or thin, dull or active; they can give him a remarkable growth of hair all over the body or cause the hair to disappear entirely. So extraordinary are their effects that they have easily become the subject of exploitation by manufacturers of all sorts of glandular products, by surgeons who transplant glands and by doctors who prescribe strange mixtures of glands of unknown composition and unknown activity with the hope that something may happen. The actual scientific knowledge of the glands is, however, sufficient to be of great use in the treatment of diseases dependent on deficiency or overactivity. It has been of value in aiding the development of diagnosis and treatment of goiter, of Addison's disease and of similar conditions. The knowledge has been important in developing a test for pregnancy and a test for the diagnosis of the sex of the prospective infant. The knowledge has been of great value in controlling the unusual symptoms that develop in women at various intervals in their lives; among other things, the knowledge has led to the control of diabetes through the discovery of insulin, the active secretion of the pancreas. Such actual knowledge as has been available has been collected in this book by Dr. Hoskins, a well known investigator in the field and for many years a contributor to endocrinologic publications. The book is written with sufficient simplicity to be usable by any intelligent reader.

MORRIS FISHBEIN, M.D.

SELECTED RECREATIONAL SPORTS FOR GIRLS AND WOMEN

By Julia H. Post and Mabel J. Shirley. Cloth. Price, $2. Pp. 132. New York: A. S. Barnes & Co., Inc., 1933.

THIS BOOK seeks to meet the problems of the new order, in which education for the use of greater leisure plays such an important part. Since physical as well as mental projects have their place in the programs sponsored by foresighted educators to meet the changing situations, Julia H. Post, director of physical education, Winthrop College, and Mabel J. Shirley, director of physical education, St. Olaf College, have chosen eight sports which may be enjoyed by inexperienced players before a high degree of skill has been developed. In their selection they have taken cognizance of the increased interest in the individual and recreational type of sport. The various activities were chosen because of the small amount of space and small number of participants required, the adaptability to a variety of situations, with little preliminary arrangement, and the fact that no specific costume was indicated. Except for badminton, the equipment needed is relatively inexpensive. The sports discussed are in general use, and four of them, namely, badminton, table tennis, shuffleboard and horseshoe pitching, have reached the point of national and international tournaments and championships. The other activities discussed are deck tennis, paddle tennis, clock golf and tetherball.

The chapter devoted to each activity includes a brief history of the sport and a discussion of technic and strategy; suggestions are given for the player, and well defined teaching helps afford simple suggestions for instructing and coaching. Numerous references are furnished at the end of each chapter. Space is alloted to excellent illustrations and to diagrams of the playing field and equipment; suggestions are given for the care of the equipment, and a list of sources of equipment is appended. With proper organization it should not be difficult to realize the three aims of the recreational sports program, which the authors outline as "the development of desirable attitudes toward sports; the development of a sufficient degree of skill in the sports to insure continued participation, and the provision of physiological and mental stimulation."

LEOLA J. HARRIS.

RECREATION AND UNEMPLOYMENT

Paper. Price, 25 cents. Pp. 58. New York: National Recreation Association, 1933.

THIS little booklet contains a surprising amount of information about recreation for the unemployed. Beginning with a statement of the need for recreation to soften the impact of unemployment and to provide means of using unwelcome leisure as constructively as possible under the circumstances, it proceeds to a brief discussion of the response, as typified in various activities in the United States. It discusses what can be done and then considers briefly the questions of leadership and financial support for the doing of it. "Made" work and recreation facilities are discussed. An appendix gives a suggested plan for local cooperative emergency spare-time committees. A bibliography rounds out the booklet, which ought to be useful to any community group without considerable experience to meet a pressing need for recreation for the unemployed.

W. W. BAUER, M.D.

International News

Betsy Dell and Robert Holtman were chosen as the healthiest girl and boy in Cook County, Ill., in a competition of 100,000 pupils.

Century Photo

Surf clubs are formed in Sydney, Australia, to patrol the beaches and safeguard the bathers. Women as well as men find this work fascinating.

Globe Photo

A mother bat with five offspring is shown to the left. The queer structure below is a bat house. People of Texas recognize that the bat is of great value as a destroyer of disease-bearing mosquitoes.

Century-Allen

"Come on in! The water's fine." This old swimming hole in Indiana is the one made famous by James Whitcomb Riley, the Hoosier poet.

Globe Photo

QUESTIONS AND ANSWERS

Duodenal Ulcer

To the Editor:—What is the treatment usually followed for duodenal ulcer? Is surgery less frequently resorted to now than in former times? Is there danger that such an ulcer may become malignant? Is surgical intervention the safest course? The patient first began being troubled with indigestion about six years ago, during which time there were often periods of time when she seemed free from symptoms. Now for about a year she has almost daily discomfort. Recent x-ray pictures seem clearly to indicate a duodenal ulcer.

L. G., China.

Answer.—The usual treatment of duodenal ulcer consists of a diet which will be nonirritating and will at the same time neutralize the acid secretion of the stomach. Milk and cream are given at frequent intervals (from one to two hours) during the day; later, eggs, cream soups and cereals are offered. Mild alkalis, such as calcium carbonate, sodium carbonate, magnesium oxide or tribasic phosphates, are given between feedings to maintain complete neutralization of the stomach contents. This treatment relieves the pain and allows the ulcer to heal. Special conditions may require modification of this program in individual cases.

Complications, such as narrowing of the duodenum from contraction of the scar at the site of the ulcer, which prevents the food from passing out of the stomach, or the perforation of an unusually deep ulcer, may require surgical treatment; but in general the opinion of internists and surgeons is that in the absence of urgent complications, ulcer of the duodenum as well as ulcer of the stomach should receive efficient medical treatment before one resorts to surgical intervention.

Cancer of the duodenum is extremely rare, and the chance that a duodenal ulcer will become malignant is so remote that it need not be considered in the decision as to the desirability or necessity of operation. In the stomach itself, cancer is more frequent; but even here there is a growing mass of evidence that the transition of a stomach ulcer into a cancer occurs much less often than was formerly thought to be the case.

In the absence of complications, treatment of duodenal ulcer should be medical, with diet and alkalis as suggested. Rest in bed will hasten the healing and reduce the amount of food necessary to maintain weight and strength. As far as possible, sources of nervous irritation and worry should be removed.

Rejuvenation

To the Editor:—I have been treated for several years for endocrine deficiency, with some benefit, but I am most anxious to discover anything new which will give me still greater efficiency. Yet I feel wary about specialists in this new field and naturally do not want to put myself into the hands of some plausible-sounding quack of the type who caters to rich and idle women with imaginary disorders. Is reliable information available?

C. M. G., New Jersey.

Answer.—Rejuvenation always has been and probably will remain an interesting subject. Experimental work on this topic is not new. Metchnikoff thought he had found the secret of long life in dietary factors, particularly in the Bulgarian milk diet. From his theories a line of experimental work with organisms producing lactic acid fermentation in milk has developed; but life has not been prolonged in that way.

Voronoff and Steinach followed the same trend with glandular treatment, and now certain exploiters of the new interest in the endocrines have taken up the cry. The work of Voronoff and Steinach, scientifically unconfirmed, has been popularized through exploitation as a topic for novels and other writings from the pen of a well known novelist.

The simple truth is that rejuvenation has not been established and might not be advisable if it were. The inquirer's best course is to continue treatment with a reputable physician.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Copper-Iron Treatment for Anemia

To the Editor:—I have read that Professor Hart of the University of Wisconsin last year discovered that iron and copper together cure certain forms of anemia by increasing the hemoglobin content 64 to 84 per cent in four weeks. Can copper as a catalytic agent with iron be bought at stores now? Is the addition of extract of liver of added value in secondary anemia? Is iron alone effective?

M. R. M., Massachusetts.

Answer.—The efficacy of copper in conjunction with iron in the treatment of anemia has not been demonstrated to the complete satisfaction of all scientific observers. It is just as well not to rush into the use of copper until its status is settled. Anemia, in any event, is a condition to be treated by a physician and not with materials "bought at stores." Liver is prescribed in some cases of secondary anemia because it is high in blood-building elements, as are all the glandular structures of the body. Liver, however, is not a specific in secondary anemia, as it is in pernicious anemia.

Pneumothorax

To the Editor:—Is gassing of the lung in the treatment of tuberculosis successful? Is it a painful ordeal? Do any ill effects follow? The infection is in the right lung and is about the size of a quarter. Does that mean that the disease has progressed far?

M. F., Illinois.

Answer.—Collapse of the lung by the injection of gas into the chest cavity is a commonly used method in patients who are not progressing as rapidly as they should.

Collapse of the lung (pneumothorax is the term used when it is accomplished by injecting gas) is moderately painful. It is usually successful, but, of course, success cannot be assured in every case. When patients do not make good progress without collapse, they often do afterward.

The size of the area in the lung is not the whole story. Only the doctor who is acquainted with the case can answer the question as to how far the disease has advanced and what treatment is best.

Effects of Motion Pictures on Children's Eyes

To the Editor:—I am in quest of some statistics concerning the effects of the movies of today on human eyes, especially the school child's eyes.

F. W. E., Nebraska.

Answer.—An interesting study on this subject, entitled "The Effects of the Cinema on the Sight," was published in 1930 by a bureau of the League of Nations, The International Educational Cinematographic Institute (via Lazzaro Spallanzani, 1, Rome, Italy). The conclusions given in this report follow:

1. The cinema as such has no deleterious influence on the sight of healthy persons from the standpoint of either eyes or nerves.

2. Neuropathics and persons of weak sight may experience ill effects owing to the phenomenon of intermittence (caused either by the worn-out state of the apparatus or the film or to the speed with which the films are turned) or to startling changes of light that tire the eyes in following the movements of a jerky and abnormal rhythm.

3. Generally speaking, it would be desirable in the case of children and young people: (a) to have daylight or subdued light screens; (b) not to prolong the normal projection of any part of a film for more than 10 to 15 minutes, followed by intervals of from two to three minutes, and to light up again gradually; (c) to arrange programs so that longer and shorter scenes should be alternated. Save in exceptional instances, programs might include: one theatrical film divided into parts not excessively long; one short cultural or scientific film, and one topical film. This allows for the necessary brain rest produced by variations of impressions.

The state of films and projection equipment must be systematically checked and supervised, both in schools and in public cinema halls by the appropriate organs.

The Institute received 14,738 answers to a questionnaire among children and young people throughout Italy, supplying the following information: 3,711, or 25.23 per cent, state that the children generally feel their eyes tired after watching films; 656, or 4.45 per cent, state that they sometimes feel this, but not as a general rule; 6,441, or 43.66 per cent, declare that their eyes do not feel tired or strained in the least; 3,930, or 26.66 per cent, did not answer the question clearly.

Viewing motion pictures entails less eyestrain than reading a book for a corresponding length of time, according to Dr. Park Lewis of Buffalo, vice-president of the National Society for the Prevention of Blindness (450 Seventh Avenue, New York City). In The Sight-Saving Review (September, 1931) Dr. Lewis says:

"Under normal physiological conditions, moving pictures do not cause serious eye fatigue. Since viewing moving pictures is distant vision, it does not demand so great an ocular effort as near vision—such as reading for a corresponding length of time. When eyestrain is caused by moving pictures it is due to one or another preventable condition, such as too prolonged fixing of the attention on a single point, or defective visual function, to a bad position of the observer in relation to the screen, to poor films, improper manipulation of the apparatus, to faulty projection or to improper illumination. With these reservations there is no more harm to the eyes in viewing the moving pictures with modern improved methods than there is in any other normal use of the eyes."

Multiple Sclerosis

To the Editor:—What causes multiple sclerosis? Is it considered a dangerous disease? How does it affect the victim? Is it curable?

A. J. P., District of Columbia.

Answer.—Multiple or insular sclerosis is defined as follows in one of the recent standard textbooks on medicine:

"A chronic affection of the brain and cord, characterized by localized areas in which the nerve elements are more or less replaced by neuroglia. (The supporting frame work for nerve cells.)

"It is most common in young persons between the ages of 15 and 30 years. Several members of a family may be attacked. It is less common in this country than in Great Britain. The cause is obscure. Among the conditions which can be mentioned are injury, fatigue, cold, exposure, intoxications and infections. Syphilis plays no part. The condition may be steadily progressive or it may display periods of acute disturbance alternating with quiescent periods."

This disease is fully described in the many standard textbooks on medicine or nervous and mental diseases. Such books can be obtained from the Library of the Surgeon-General's Office, Washington, D. C., or in the library of one of the leading medical schools.

"Because the areas of tissue involved vary so much, the symptoms of this disease also vary. Some of the most characteristic are weakness of the legs, increase of some reflexes and loss of others, disturbance of gait, tremor and a disturbance of speech called scanning. Mental changes are common in the later stages. They are shown by defective memory, emotional disturbances, and lack of control."

Phosphorus Burns

To the Editor:—I have a bad burn covering a considerable part of my right hand. This was caused by white phosphorus dissolved in carbon bisulphide, which splashed on my hand and burst into flames before I could remove it. Is there danger of absorption of the phosphorus into the blood stream? What is a good application for treating the wound? I am under the care of a local doctor, but he has no previous experience in treating a phosphorus burn and is giving it the same treatment he administers to fire burns.

C. A. H., Oklahoma.

Answer.—During the recent war period, numerous phosphorus burns occurred, some of which resulted from the manufacture of phosphorus-containing projectiles and others from the wounds from artillery fire. These wounds proved to be resistant to most forms of treatment. Extensive cutting away of damaged flesh proved practical in many instances. In deep wounds involving bones, necrosis, the characteristic lesion of phosphorus damage, arose in some instances. This necrosis is a secondary, rather than a direct, result of phosphorus action. This chemical deprives tissues, and notably bony tissues, of their resistance to bacterial action. The bony destruction is thus the result of local unrestrained bacterial growth.

In these local burns it is probable that small amounts of phosphorus or phosphorus derivatives are absorbed into the blood and are transported to other portions of the body. Fortunately, systemic poisoning from this portal of entry is not proved to exist. Apparently, the amounts so introduced are sufficiently below the threshold of damage.

The following references may be consulted: "Phosphorus" (Occupation and Health Series no. 6, Geneva, International Labor Office); "Phosphorus Necrosis in the Manufacture of Fireworks and in the Preparation of Phosphorus" by Emma F. Ward (Bulletin 405, U. S. Bureau of Labor Statistics, May, 1926).

While this answer deals with the worst possibilities that may arise in connection with phosphorus burns, it is the intent of the discussion to imply that the usual burn is unattended by any direful results. This is especially true of superficial skin injuries.

GREAT HOSPITALS USE IT...
USE IT IN YOUR OWN HOME
HEXYLRESORCINOL SOLUTION S.T.37
LIQUOR HEXYLRESORCINOLIS 1:1000
12 FLUID OUNCES
S&D
A powerful non-poisonous antiseptic for cuts, wounds, burns, scalds and the hygienic care of mucous membranes. Kills bacteria almost instantly on contact.
SHARP & DOHME
BALTIMORE PHILADELPHIA

USE AS YOUR SAFEGUARD against infection from cuts, scratches and open wounds the powerful, non-poisonous antiseptic many great hospitals are using. In case of serious injury consult your physician.

This modern antiseptic, Hexylresorcinol Solution S. T. 37 (1:1000), is stronger than carbolic acid in any usable solution, yet safe even if swallowed. So powerful that leading hospitals rely on it daily for use in operations, for severe burns and open wounds, and in cases of infection. Yet so safe, you can use it freely in your own home, and teach your children to use it.

Apply it instantly to every cut and scratch. Pour it right into open wounds—even full strength, it will not sting or burn. It spreads more rapidly and more deeply than many other antiseptics into the crevices of wound tissue.

Keep a bottle of Hexylresorcinol Solution S. T. 37 in your home medicine cabinet ready for immediate use whenever antiseptic care is needed.

The Seal of the Council on Pharmacy and Chemistry of the American Medical Association should serve as an indication of its trustworthiness.

Buy a bottle today. It's economical. The 50¢ bottle is now a whole ⅔ bigger than before. And you get the large size for only $1.00 instead of $1.25. Prices now the same in both the United States and Canada.

HEXYLRESORCINOL SOLUTION S. T. 37

Made by SHARP & DOHME

ACCEPTED AMERICAN MEDICAL ASSN.

A Very Close Call

HAVE you ever escaped death by a fraction of a second when you thoughtlessly stepped almost directly into the path of a fast moving automobile? Or when you thought you were careful in crossing a street, has a car ever whirled around a corner, missing you by inches? That time you were lucky.

In this country, forty pedestrians are killed every day by moving cars and eight hundred are injured —some of them maimed for life. Thirty-five pedestrian accidents occur every hour—that is the present daily average.

Reckless drivers are directly responsible for part of this daily tragedy, but the majority of such accidents are the result of carelessness or thoughtlessness of pedestrians.

Although the safety training of children by some schools has helped to prevent many accidents, about ten children are still being killed every day. Even effective signals and alert traffic officers at crowded street corners are powerless to help the persons who step out from behind a parked car on a street or highway.

Your safety and the safety of every member of your family, when crossing a street or walking on a highway, depends on the development of a fixed habit which must become second nature: Make certain that the road is clear before you take a step.

Will you uphold the teachers who are training the children to watch for the "Go" and "Stop" signals —and will you obey traffic regulations provided for your own safety? Send for the Metropolitan's booklet "The Safe Walker's Memo Book." It tells of the constant dangers which threaten those on foot—how you and yours can be safe walkers. Address Booklet Dept. 833-Z.

ARE YOU A SAFE WALKER?

To how many of these questions can you answer NO?

Do you:	NO	YES
1. *Step out carelessly from behind parked cars or obstructions?*		
2. *Try to weave through traffic?*		
3. *Cross streets diagonally?*		
4. *Get off and on vehicles in moving traffic?*		
5. *Cross streets without observing traffic?*		
6. *Cross at intersections against the light?*		
7. *Stand in the street?*		
8. *Allow your child to play in the streets?*		
9. *Walk with instead of against traffic on the road or highway?*		
10. *Fail to use particular care at night?*		

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, PRESIDENT ONE MADISON AVE., NEW YORK, N.Y.

© 1933 M. L. I. CO

Potassium Chlorate Poisoning

To the Editor:—Can one suffer any ill effects from poisoning with potassium chlorate in small quantities? Is it harmful either directly or through accumulation in the body? Can one receive a harmful quantity from certain tooth pastes which contain it?

J. W. H., Connecticut.

Answer.—According to Torald Sollman's "Manual of Pharmacology," potassium chlorate poisoning is fairly common, either by an overdose, since the substance is not generally regarded as poisonous, or by the swallowing of some of the solution given for gargling. He does not mention tooth pastes, but, quite obviously, tooth pastes, mouth washes or gargles containing potassium chlorate are in the same category if swallowed.

He goes on to state that susceptibility to this drug varies greatly, and this is one of the principal dangers. He states that ⅓ ounce may be considered dangerous, and ½ ounce fatal. Since potassium chlorate in tooth pastes is only a percentage of the ingredients, and since as much as ⅓ ounce of tooth paste would scarcely ever be swallowed, the danger probably is not particularly great, unless the individual is one of the more susceptible group. Persons who use large quantities of tooth paste at frequent intervals are, obviously, more liable to poisoning if the tooth paste contains potassium chlorate.

Vitamin F

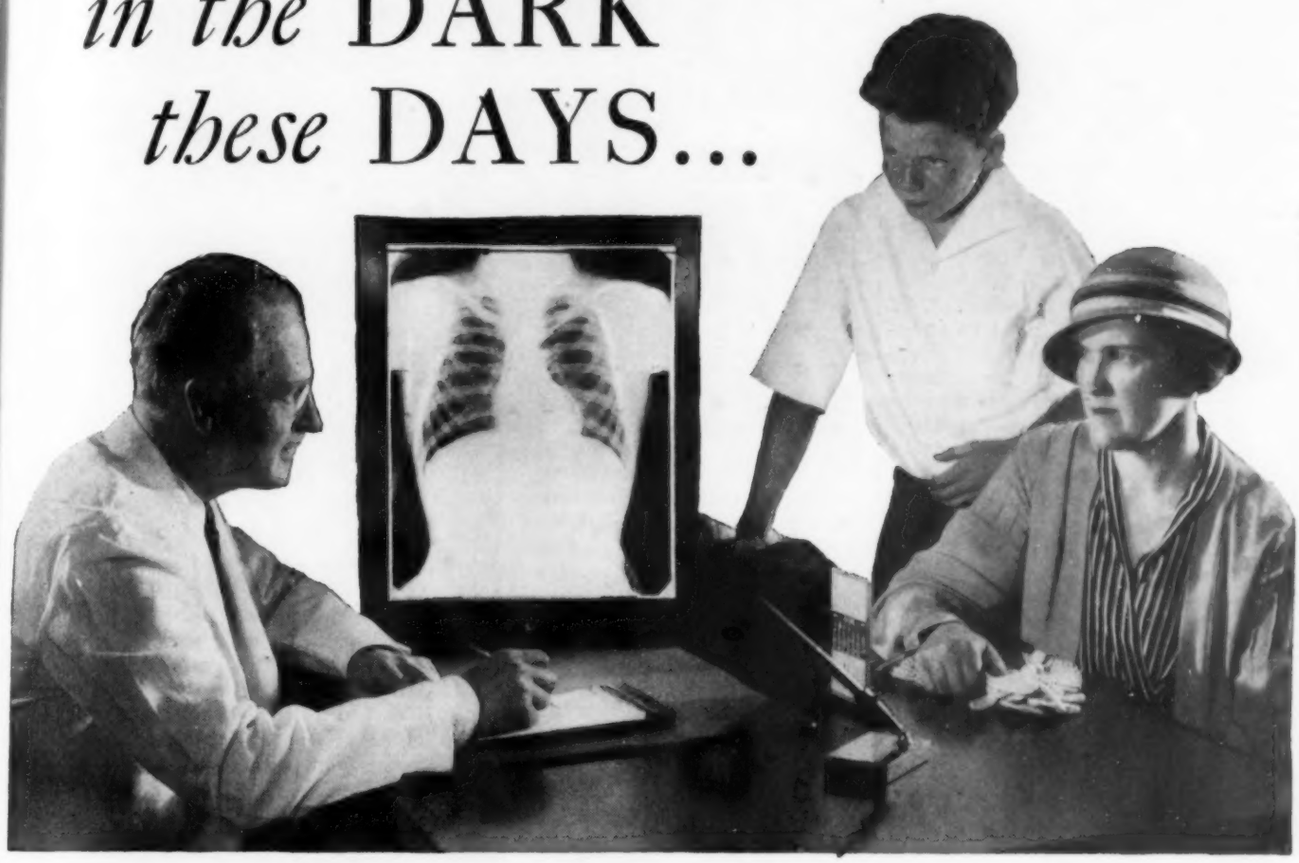
To the Editor:—Is there a vitamin F? If there is not, why was this letter skipped in naming the vitamins?

F. W. H., Wisconsin.

Answer.—There is such a vitamin; in Europe it is called vitamin F; in America it is now known as B_1, though formerly it was called F in America as in Europe. When first recognized, it was designated according to the next unused letter in the alphabet. Subsequent research has proved that vitamin B consists of two elements, one of them identical with the element designated as vitamin F. Hence the vitamin F designation has been abandoned in this country in the interests of simplicity.

Vitamin B, then, consists of B_1, or F, destroyed by heat, and concerned in protection of the nervous tissues against beriberi and in stimulation of the appetite; and B_2, or G, not destroyed by heat, and possibly concerned in the prevention of the deficiency disease known as pellagra.

PHYSICIANS *don't work in the* DARK *these* DAYS...



WHEN a baseball hits Jimmy in the ribs—when he falls off his bicycle—tumbles down stairs—does any of the things boys do, Jimmy's bones are apt to suffer.

The "bump" may be just a sprain, but there is always possibility of fracture. If it goes unnoticed, serious complications may result.

Radiographs should be made, for x-rays give a true picture of the conditions.

When there is fracture, x-rays are an indispensable guide. They show the exact location of the fragments. And radiographs made after the bones are set supply the necessary proof that they are properly aligned.

Today the physician does not need to work "in the dark." X-rays give a picture of the internal parts and organs. He can "see" the condition he must treat.

Early Discovery by X-rays

Since x-rays show internal conditions, most disorders can be discovered before there are definite outward symptoms. Treatment is easier and more certain of success. Radiographs should be included in the annual physical examination for the preservation of health.

HAVE AN ANNUAL HEALTH AND X-RAY EXAMINATION

• *The booklet, "X-rays and Health," describes many of the ways in which x-rays are used by present-day physicians. Mail the coupon at the right for a free copy.*

EASTMAN KODAK COMPANY, *Medical Division*
357 State Street, Rochester, N. Y.

Gentlemen: Please send me a free copy of your booklet, "X-rays and Health."

Name _____

No. & St. _____ City & State _____

Hyperacidity and Acidosis

To the Editor:—Is there any brief explanation for hyperacidity and acidosis as to cause and symptoms? Are they in any way related?

T. W., Idaho.

Answer.—Hyperacidity, by which the inquirer probably means hyperacidity of the stomach, is not directly related to acidosis, which is a term applied to a condition in which the alkalinity of the blood and the tissues is reduced. The body never becomes acid as a whole; acidosis means a reduced alkalinity. Actual acidity is not compatible with life. Secretions of the body may, on the other hand, be acid, as for example, perspiration, urine and gastric juice. The gastric juice must be acid to function. Hyperacidity means an excess of acid, usually accompanied by excess secretion as well. It may be due to nervousness or to organic disease of the stomach or of adjacent organs; it may be serious or merely annoying. In the individual case the doctor who has examined the patient must settle as to the seriousness of the condition and what should be done about it.

Deafness

To the Editor:—I have a grandson, aged 10, who had his tonsils and adenoids removed when he was 2 years old; when he was 6, he had the adenoids removed again. Now he does not hear well. Can anything be done?

W. H., Illinois.

Answer.—In some cases the removal of adenoids is incomplete. A second operation then becomes necessary. The location of these structures makes it necessary for the surgeon to work by touch alone, since he cannot see the adenoids while he is operating.

Without a thorough examination it is impossible to tell what may be the cause of the child's poor hearing, though it is probably to be found in the nose and throat somewhere, or in the ear itself. At any rate, a 10 year old child should not be allowed to become deaf if there is any way to avoid such an occurrence. Ask the family physician to recommend some doctor specializing in diseases of the ear, nose and throat; then go to see him.

If there is nothing to be done toward restoring or improving the boy's hearing, he should be taught lip-reading at once.

"Keep your face always toward the sunshine, and the shadows will fall behind you."—*Walt Whitman.*

Here it is,

MOTHER

AN EASY-TO-READ FEVER THERMOMETER

Taylor

INSTANTA

$1.00

Here *is* news! Right now your dealer is offering a genuine Taylor Fever Thermometer—with several new features—built with Taylor accuracy—*that costs you only $1.00!*

Glance at the picture of this thermometer shown to the right. First of all, it registers in one minute. Next, those little marks (graduations, we call them) are etched in red on one side of the scale to indicate *above normal* temperatures and etched in black on the other side to indicate *below normal* temperatures. When the mercury touches both red and black—that means normal, nothing to worry about. Far easier to read than ordinary thermometers.

Remember the name—Taylor Instanta. Better get two or three at this exceptional price—it may go up before the winter is over.

HEALTH BOOKLET FREE

Write for "Childhood, Youth and Old Age," sent free upon request to Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Taylor

INSTRUMENTS

IN INDUSTRY, other types for indicating, recording and controlling temperature, pressure and humidity

THINKING OF STUDYING MEDICINE

(Continued from page 700)

discouraged by the difficulty of making both ends meet while trying to do high class work in an unappreciative community. They finally argue that if they can get $1 cash for handing out a few pills on a snap diagnosis and can see ten patients in an hour, they are better able to pay their grocer than if they charged $5 for a half hour's work each on two patients who would never pay a cent and would advertise them over the town as robbers."

"What do you think of a plan of having the state pay physicians for their services and taxing people for this on a regular basis?"

"That is what the profession is mulling over in its own mind. It seems highly probable that some such plan will be worked out unless the profession and the public succeed in understanding each other better. I should hate to see that plan put into effect for, while it would undoubtedly relieve the general run of physicians of the bugbear of trying to collect bad debts, it would not encourage careful scientific work and personal interest. The physician would become a public servant rather than a professional adviser. Under such a plan I should not expect to see any great advancement of the profession."

"I think you have given me a fair idea of the profession of medicine, but I am still up in the air as to whether or not I'm fitted for it," Tom Branch observed doubtfully.

"You'll continue up in the air, as you say, for some time. Don't decide anything definitely just yet, for you have plenty of time. But remember, if a man can bring himself to be contented on a moderate income, if he is willing to work at all odd hours of the day and night, is satisfied to go to bed each night with a certain comfortable feeling of accomplishment, and is generous enough to forget and overlook irritating pettiness in the people he serves, he has a great field of usefulness before him as a practicing physician."

Dr. Branch rose to his feet, knocked the ashes from his pipe into the fireplace and stood looking down at his son earnestly. After a moment or two he said: "I've given you a fairly rough picture of medical practice, Tom. The trouble has been that most doctors who are called to speak at prep school and collegiate gatherings paint their profession in the most glowing

(Continued on page 755)

THINKING OF STUDYING MEDICINE

(Continued from page 754)

colors. This is due largely to the fact that only the most distinguished men are asked to speak. These men are proud of their own accomplishments and are likely to play up to the adulation of their young hearers. It always amuses me to hear one of those eminent men 'sound off.' He is usually so blatantly proud of himself."

"It would not be a bad idea if schools and colleges had a chance to hear the point of view of an ordinary practitioner," the boy remarked. "I've listened to one or two of those old birds. They gave me more or less of a pain."

"Well, you don't hear many general practitioners on the lecture platforms. They are too busy for one thing; they are usually poor speakers for another. The thing you want to get into your head is a dispassionate point of view of the medical profession. I've given you much to discourage you."

"I am not discouraged," the boy replied. "You have given me a fair outline of what I may expect if I should study medicine, and that is what I've wanted."

"Exactly. Now think things over for a year or two, or longer. When you see some friend of yours comfortably located in a bank and drawing a salary of $30 a week, try to picture the same man's predicament if that bank failed. When you become envious of a millionaire rolling along in his big car, place that man behind his desk some morning when the bottom has fallen out of his securities and he knows he will have to tell his luxury-pampered family that they are bankrupt. Then picture to yourself the clerk of 65, who has been a cog in a wheel for forty years and now momentarily expects to be discharged. Those are all real pictures of today, and the sensible, dignified, hard working physician does not quite fit into any of them.

"Nothing comes easy in this life. The harder you work, the more you will appreciate what you get. The rewards of a doctor's life are not always cash. Some of them are the sensations of triumph that come from within when a task has been well done. From first to last, it is, or should be, a life of service, and its financial recompense is a secondary consideration. However, even though that recompense is moderate, it is sufficient for any man who has common sense enough to live within his means and does not make a fool of himself by trying to get rich."

Illustrations and text copr. 1933, Kleenex Co.

WHY multiply your tortures by irritating an already inflamed nose with a rough, damp handkerchief, soggy and astringent with accumulated nasal fluid?

Do as countless other hay fever sufferers have done—switch from handkerchiefs to Kleenex, and find blessed relief throughout the hay fever season!

Soft, dry, soothing

Kleenex is comforting, soothing, silky, because it is made of cellulose—the softest yet strongest of tissues.

Kleenex is more efficient, because it is so highly absorbent—far more so than linen or cotton. It is cleanlier, always fresh and dry, because you simply use and destroy, instead of carrying always with you that soggy, messy, revolting, mucus-soaked handkerchief!

And no more eternal handkerchief washing, the most disagreeable job you can inflict on yourself or anyone else! As for having handkerchiefs laundered—it costs less to use Kleenex.

Try the new Pocket Packet

Hay fever sufferers especially will appreciate the new Pocket Packet of Kleenex. Each packet contains 12 full-size Kleenex tissues.

Use the regular 25c package in home or office. Carry the Pocket Packet with you. It fits your purse or pocket, always handy. And so easy, when you are out, to drop in at the nearest drug store and get a fresh supply—2 packets for 5c.

THE POCKET PACKET
Take it with you wherever you go—indispensable, convenient

2 packets for 5c

New!...Kleenex Pocket Packet. 24 full-size tissues, 5c. Every druggist should have them on his counter.

KLEENEX *disposable* **TISSUES**

MOTHERS AND CHILDREN COME FIRST IN DENTISTRY

"Dentistry is recognized as holding a definite place in health service and there is no place in the field of public health where dentistry is so important as in the care of the mother and child," a report from the New York state department of health maintains.

The first step in preventive dentistry is proper diet for the mother both before and after the child is born. Milk is the only food that contains sufficient calcium for the lime needs of the body. Fresh fruits and vegetables and direct sunlight, or its equivalent in cod liver oil, must be provided also, as they supply the vitamins which fix the minerals in the teeth. It is false economy to reduce the amount of milk in the diet. A quart of milk each day is advisable for the mother before the birth of her child, and each growing child should have the same amount.

Second, keep the teeth clean by brushing them three times a day. This alone will not prevent the decay of teeth but it is an important step in that direction.

The child's temporary set of teeth should be cared for as regularly as the permanent teeth. The child will not develop a dislike for the dentist's office if regular trips are made when little work has to be done.

TAHITI SENDS A MESSAGE

The following letter, which was recently received, brings fresh evidence that HYGEIA carries its message to far distant lands and arouses interesting comment among its readers:

The Editor of Hygeia
Chicago
Dear Sir:

With regard to the amusing "Case of Mistaken Identity" in the March number of Hygeia, I should like to raise the question whether a man of Holmes' vast knowledge would have awakened Dr. Watson by placing a hand on his shoulder. I am sure that a well informed Malay would not do such a thing, but would rouse the sleeper by touching him below the waist.

Regardless of Holmes' face, Dr. Watson may well have been actually frightened.

Your magazine is greatly valued by many persons after it leaves my hands.

Very truly yours,
HARRISON W. SMITH.

Papeari, Tahiti
Society Islands

•SUNSHINE•
Health
Insurance
for Your Child

Strong, sturdy bodies . . . contented, carefree minds. These are your child's happiness and to these the sun contributes in abundance.

Vanta
REG. U.S. PAT. OFF.

Sun Suits and Water Woolies

insure full measure of those benefits and are truly best for babies. Ask for them at leading stores.

•

Earnshaw Knitting Company
Newton, Massachusetts

IN DIETARY RÔLE, WINE CANNOT RIVAL MILK

"Certain American newspapers have recently featured special foreign correspondence alleging that French physicians, 'following the well known practice at Vichy, are prescribing more and more the moderate drinking of wine instead of milk for patients suffering from gastric or intestinal troubles.' It is further reported that 'one of the eminent physicians who are leading the antimilk campaign in favor of wine' regards it as a duty to inform the public about the physiologic advantages of wine. These statements, which have been widely circulated at a moment when the repeal of the Eighteenth Amendment is being discussed in every home, are already promoting numerous inquiries to physicians. It seems peculiarly unfortunate that the problem should be raised in this country at a period when much effort continues to be expended in the attempts to promote a more liberal use of what has been termed 'our most nearly perfect food,' milk," according to an editorial appearing recently in *The Journal of the American Medical Association.*

The editorial concludes: "Doubtless wine may have a place in the regimen of certain persons, though it continues to be proscribed in the United States. But it would be a step backward to permit exceptional and extreme circumstances —and particularly the doubtful recommendation of pseudoscience —to menace the growing appreciation of the value of milk in the American dietary. Enthusiasts have called milk the modern elixir of life. It is not necessary, however, to deal with such superlatives in assigning to milk a dietary—and often a dietotherapeutic—rôle that even the choicest of vintages of the art of fermentation can never hope to rival."

SWIMMING PRECAUTIONS

Among the precautions that should be taken to prevent accidental drowning are the following, as listed by the Iowa state department of health:

1. Do not swim in a place you suspect may be unsafe.
2. Do not go in swimming until at least an hour after eating.
3. Do not venture too far from shore in deep water.
4. Leave the water as soon as you feel chilly.
5. Choose a well supervised pool rather than the "old swimmin' hole."

PROBLEMS IN ADOPTION MUST BE FACED SQUARELY

"Adoption in most cases means the bringing together of a homeless child and a childless home. It carries with it the responsibility of parenthood in its broadest and most comprehensive sense. It is an adventure which involves affection, tolerance and sacrifice and has all the possibilities of success and failure, satisfaction and dissatisfaction, and of joy and sadness, in any child-parent relationship," according to the Connecticut state department of health.

Because adoption does entail responsibility, a few definite problems must be faced squarely.

For the benefit both of the foster parents and of the child, no child should be adopted without a probationary period of at least one year and preferably two or more years. It is highly desirable that both the parents and the child should be completely satisfied. The probation period lessens the chances of incompatibility in the family life.

In most cases, infancy is the ideal time for adoption.

The child should be submitted to a complete physical examination by a competent physician. It is best to determine as accurately as possible the child's intellectual endowment.

Knowledge of the child's heredity and background is important if such knowledge is used objectively and constructively.

The sooner a child is told that he is adopted, the better it is for all concerned. By postponing this announcement the foster parents are only running the hazard of having the child find out from some one else and thus causing him to lose faith in their integrity. Understanding the fact that he was deliberately chosen will help to alleviate the loss he feels because he was not born into the family.

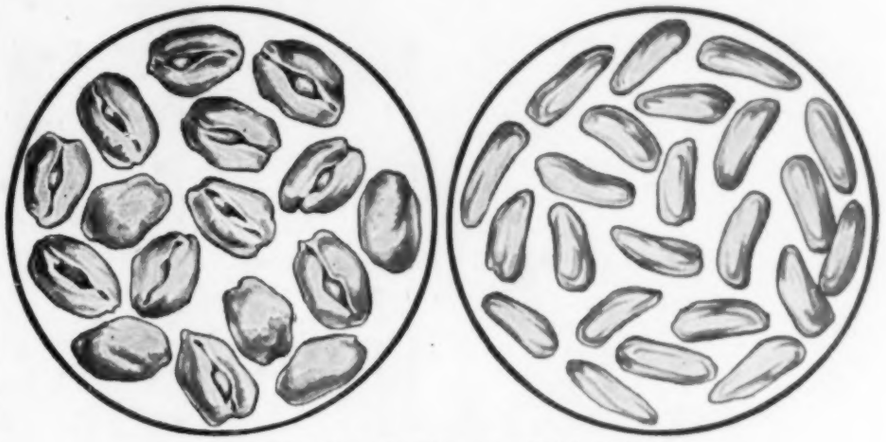
A feeling of security in a home rather than a great number of material advantages is what any child wants most. His feeling of security within the home will be based primarily on what he senses to be the attitudes of his foster parents.

ONE OR A MILLION

Kill a fly in spring,
You do a fine thing;
Kill a fly in May,
You keep thousands away;
Kill a fly in June,
Your results come not so soon;
Kill a fly in July,
You just kill a fly.

—*Iowa State Department of Health.*

Puffed Wheat **Puffed Rice**



Exact size of grains, after they are puffed to eight times their natural size.

The Food That's Shot From Guns

Surprise your folks tomorrow morning with a dish of Puffed Wheat or Puffed Rice.

Serve them this crisp and delicious food—it is porous like bread. It will melt in the mouth.

Your folks will say, "Why, this is great. Let us have it every morning."

Exploded by Steam

This is the way we make it:

The whole wheat or rice kernels are put into bronze guns. Then those guns are revolved, for forty minutes, in a heat of 550 degrees. That heat turns the moisture in the grain to steam, and the pressure becomes terrific.

Then the guns are fired. Instantly the steam explodes every granule. Thus the kernel of grain is expanded eight times. Yet it remains unbroken—shaped as before.

Puffed Wheat, 10c—Puffed Rice, 15c

You owe these most delightful foods to Prof. A. P. Anderson.

He was seeking a way to break up starch granules.

Starch that is broken digests much more quickly. Ordinary cooking does not break it up quickly. So he sought a way to expand every granule by exploding the moisture in it.

When he did this, he found that he had created two most enticing cereal foods.

Serve it Tomorrow

Get Puffed Wheat and Puffed Rice.

Your folks will like them better than any other cereal food in existence. Begin tomorrow morning.

Made only by The Quaker Oats Company

CHICAGO PREPARED FOR WORLD'S FAIR TRAFFIC

Motorists attending A Century of Progress will find Chicago ready to handle them speedily and safely, but they in turn are asked by traffic officials to exercise the utmost care and caution both while driving to and from the Fair and while using Chicago streets.

A mammoth educational campaign has been going on during recent months in all grade and parochial schools of the city in the hope of inspiring children to be particularly careful while the Exposition is in progress. City officials have also tightened up enforcement in order to impress local drivers with the importance of extreme caution.

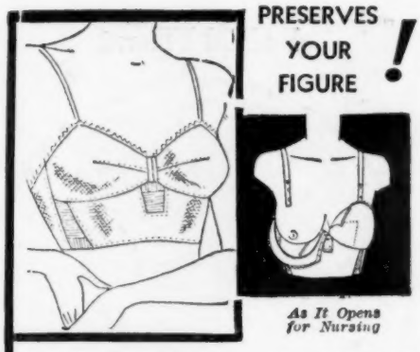
The National Safety Council pleads with Chicago-bound motorists to give especial consideration to the following safe driving hints:

1. There is danger in speed.
2. In Chicago be on the inner lane of traffic to make a left turn.
3. Signal when starting, turning or stopping.
4. Obey all traffic signals.
5. Don't try to beat a changing traffic light.
6. Always stop at boulevard stops.
7. Keep brakes in good repair and check the headlights regularly.
8. Watch out for skids on wet or greasy pavement.
9. Be on the alert at railway grade crossings.
10. Never insist on the right of way.
11. Let the passengers do the sight-seeing while you are at the wheel.
12. Give the pedestrian every consideration.

EDUCATION DEVELOPS WHOLE CHILD

Education is turning its attention to the whole child; it is attempting to provide for continuous growth and harmonious development. Five important considerations in attaining this development are outlined by May Hill in the *Michigan Education Journal.* Education, if it is to be real, must (1) challenge the whole-hearted interest of the students; (2) arouse their curiosity; (3) call for problem solving; (4) give rise to creative endeavor and (5) be so rich in content that it involves several or most of the general school subjects, as history, geography, English, art and science and even reading, writing, spelling and numbers.

Children should be taught how to think more than what to think.



As It Opens for Nursing

NURSING BRASSIERE *by Maiden Form*

Scientifically designed to give nursing mothers anatomically correct support and to preserve the figure—both during and after the nursing period. Recommended by doctors, this brassiere enables you to wear smart dresses, with every confidence in the trim contour of your silhouette. Breast sections are delicately rubber inter-lined, with holders for pads of sanitary gauze, to protect nipples. No. 7005, of dainty flesh colored cotton mesh, $1.50.

Also, Short Nursing Bandeau, without diaphragm band but with same breast shield features as the long nursing brassiere. No. 382, of flesh colored porous mesh, $1.00.

If Your Dealer Cannot Supply—Write Dept. HYA

MAIDEN FORM BRASSIERE CO., Inc.
245 Fifth Avenue, New York

The SEX TECHNIQUE IN MARRIAGE • By I. E. Hutton, M.D.

"Dr. Ira Wile describes the book as a clear, succinct, non-emotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly . . . It is primarily concerned with the conduct of the honeymoon and with the technic of the sexual performance." —Hygeia.

Acclaimed by the Medical Press Everywhere

At bookstores or direct from Price $2.00
EMERSON BOOKS, 126 Maiden Lane, N.Y.C.

Try Shopping Among HYGEIA Advertisements

PROTECT BABY'S FOOD

With this new tab, fingers never touch inside of nipple. It's shaped like mother's breast. The bottle is *easily* cleaned, sterilized filled. Guaranteed against all temperature changes in normal use.

Hygeia
The Safe Nursing Bottle

UNDULANT FEVER HAS ITS SOURCE IN INFECTED ANIMALS

Undulant fever is an example of a disease which has its source in infected animals and which in turn affects man. This disease was first called Malta fever and has only been recognized by its right name within the last decade. The disease is called undulant fever because of the wavelike variations in temperature.

Rise in temperature, loss of weight and strength, chills, sweats and pains in the joints are characteristic symptoms of undulant fever. The disease has a rather low mortality rate but is important because symptoms may persist for a number of weeks and even months before normal health and strength are restored.

While goats may spread the disease in the Mediterranean or in Mexico, nearly all the cases of undulant fever in the United States are traceable to infected cows or hogs. Germs enter the human body through the mouth or through the skin. The disease may be prevented by using milk from animals known to be free from infection or milk that has been pasteurized. By protecting the hands and avoiding close contact with infected animals or their tissues, the disease can also be controlled, according to the Iowa state department of health.

LARGE CITIES ARE SLOW IN ABATING SMOKE PALL

Opinion was expressed at a meeting of the American Society of Heating and Ventilating Engineers by H. B. Meller, head of the air pollution investigation of the Mellon Institute of Industrial Research, that the present practice in municipalities in fighting air pollution is lagging far behind the possibilities as revealed by scientific research. The outstanding weakness of the whole smoke abatement movement has been the limitation of ordinances to requirements that could be met by appliances already on the market.

He pointed out in addition that city dwellers have a right to cheerful, clean and inspiring surroundings, and in the future those cities which keep the air cleanest can naturally expect to gain fastest in population and to attract the most visitors.

A successful campaign for pure air will be one of the popular, liberal movements characterizing the impending period of economic recovery, Mr. Meller maintained.

WHAT DOES THE FUTURE HOLD FOR YOUR CHILD?

If you could "dip into the future far as human eye could see" and could learn that your toddler, who is now a bundle of health, might be a laggard at 15 and a confirmed dullard at 25 because of some physical or mental defect, would you not be activated into correcting that difficulty immediately?

Because the future cannot be foreseen and because physical defects easily go unnoticed, it is the wise mother who protects her small child by a preschool examination. The following questions deserve careful consideration:

Is his eyesight good?

Has he any imperfections of speech?

Is he partially deaf, as 3 million American school children are known to be?

Is he undernourished?

Is he tired looking and lacking in physical energy?

Defects such as these are not outgrown, as so many mothers believe them to be at the outset. The pity of it is that when some defect does develop, the child is physically and mentally unfit to stand the strain of school life. In fact in later years it may mean the difference between success and failure.

NUMEROUS INSECT PESTS SURVIVED WINTER

"Many of the important insect pests hibernated successfully this winter," according to the spring surveys of the bureau of entomology, United States Department of Agriculture. "Temperatures were not low enough over most of the country to destroy insects in large numbers, and where it was extremely cold a thick blanket of snow protected their winter quarters.

"Grasshopper eggs came through the winter in excellent condition; the Mexican bean beetle in the Ohio river valley showed a high survival; the Hessian fly and the chinch bug wintered successfully in the Middle West; and the tobacco flea beetle in North Carolina passed the cold months in good shape. The codling moth in the East Central States and in Missouri and the sugarcane borer in Louisiana, however, suffered a high mortality from extreme or unseasonable cold.

"Weather unfavorable to insect development but favorable to parasites and disease that attack the pests materially reduces the insect hordes the farmer must combat each season."

"I DRANK COCOMALT WHILE NURSING MY BABY"
"I drank Cocomalt regularly before my baby came and while I was nursing him. I know Cocomalt helps build strong bones and teeth, for it is rich in Sunshine Vitamin D."
"I'D LIE AWAKE FOR HOURS"
"Every night I'd count sheep but I couldn't fall asleep. A hot drink promotes relaxation, so now I drink hot Cocomalt before retiring, and I drop into sound, restful sleep almost as soon as my head touches the pillow."
"SEE HOW HUSKY MY LITTLE BOY HAS BECOME"
"Bobby was underweight until I began giving him Cocomalt in milk. Now he's a real husky youngster, well-rounded and full of vitality."
"HATED MILK—NOW BEGS FOR IT"
"Milk was distasteful to my little girl—but now she adores it mixed with Cocomalt! She drinks all I give her and begs for more!"
"LOTS MORE PEP THAN I'VE HAD IN YEARS"
"It's amazing what Cocomalt has done for me! I don't know what four-o'clock fatigue is, any more. That delicious food-drink has filled me with wonderful new pep!"
Food-drink gives new energy to thousands
Children show remarkable gains in weight
GIVE your children Cocomalt! Prepared as directed, it adds 70% more food-energy nourishment to milk. Every glass you or your child drinks is equal in food-energy value to almost two glasses of milk alone.
Cocomalt contains a rich supply of Sunshine Vitamin D (under license by Wisconsin University Alumni Research Foundation). A glass of Cocomalt, properly prepared, is equivalent in Vitamin D content to two-thirds of a teaspoonful of standard cod-liver oil. This enables the body to efficiently utilize the food-calcium and food-phosphorus—richly supplied by Cocomalt and milk—in developing strong bones and teeth.
Sold at grocery and drug stores in ½-lb., 1-lb. and 5-lb. vacuum-sealed cans. Be sure you get the genuine Cocomalt, the Vitamin D food-drink.
Special Trial Offer—Mail coupon (and 10c to cover the cost of packing and mailing) for trial can.
Cocomalt
A DELICIOUS FOOD DRINK
CHOCOLATE FLAVOR
R. B. Davis Co., Dept. K-8, Hoboken, N. J.
Please send me a trial-size can of Cocomalt. I enclose 10c to cover the cost of packing and mailing.
Name
Address
City
State
Cocomalt is a scientific food concentrate of sucrose, skim milk, selected cocoa, barley malt extract, flavoring and added Sunshine Vitamin D. It is accepted by the Committee on Foods of The American Medical Association.

BUTTER-FAT MAY BE LEFT IN BOTTLE IN MILK DRINKING

Many children at school who drink milk from bottles fail to get much of the richest part of the milk, the butter-fat, the United States Department of Agriculture has found in tests in large cities in fifteen states.

The children fail to get all the butter-fat when they drink the milk through straws. They drink the thinnest milk first from the bottom of the bottle, and if they leave any, it is usually the cream. In the experiments the children left an average of 5.63 per cent of the milk, but this contained on an average nearly 16 per cent of the butter-fat.

The least that can be done to help avoid this is to shake the milk in the bottle thoroughly. A surer way to have the children get more of the butter-fat is to homogenize the milk. Milk is homogenized by subjecting it to high pressure. This breaks up the fat into tiny particles, and it remains thoroughly mixed in the milk. According to the department, practically every dairy which makes ice cream has apparatus for homogenizing the milk, and it would be feasible to homogenize the milk intended for school children, especially in the larger cities.

Experiments were made in cities in Alabama, California, Colorado, Florida, Georgia, Illinois, Louisiana, Minnesota, Missouri, New Jersey, North Carolina, Tennessee, Texas, Virginia and Washington. The average milk served contained 4.08 per cent of butter-fat, but the milk that the children drank had only 3.43 per cent of butter-fat. Memphis children left the least milk and Los Angeles children the most. Chicago children left the most butter-fat and those in Mobile, Ala., the least.

INDUSTRIAL HYGIENE

The worker can do much to avoid occupational disease by following ordinary hygienic measures, simple to apply and universally recommended, such as washing the hands before eating, changing his working clothes, alternating his work where possible, avoiding prolonged contact with drugs and chemicals, using the windows for ventilation, and employing other simple methods and devices. These precautions will help to avoid lead and arsenic poisoning in work with paints, carbon monoxide poisoning in garage work, and the dangers of silica dust in the granite and pottery trades.

Leisure time is time for doing something useful.

For Baby's sake

stay out of the kitchen!

It isn't fair to baby—really—to spend long hours in the kitchen — summer hours you *both* might be enjoying out-of-doors! For baby's sake and for your own — learn what doctors tell young mothers just like you. It isn't necessary to cook and strain vegetables at home. The Gerber Products are already prepared. They need only be warmed to feeding temperature and served. And in every way — they are BETTER FOR BABY!

Gerber's Strained Vegetables

are the finest of fresh vegetables, grown in our own gardens, prepared in such a way that their natural food elements can be best utilized by small stomachs. They're cooked while still crisp, by special air-excluding equipment which retains the maximum vitamin and mineral salt values — the true, natural flavor. Strained and unseasoned — they're ready to warm and serve.

Gerber's Strained Cereal

is an infant cereal — not an adaptation of a general purpose cereal. The combination of whole wheat, hulled oats and added wheat germ, long-cooked in whole, pure milk, produces an ideal blending of important food values — and a flavor so appealing that many babies who resist cereal, eat Gerber's eagerly.

The rich food values of the bran are first cooked into the cereal. Then the harsh bran hulls are strained out. Thoroughly cooked, it's ready to warm and use.

The Gerber Products enjoy the acceptance seal of the Committee on Foods of the American Medical Association which not only accepts the products themselves but the things we say about them.

VISIT THE GERBER EXHIBIT Hall of Science Fountain Rotunda CENTURY OF PROGRESS

Helpful Booklet FREE— Send Coupon

Strained Tomatoes — Beets Vegetable Soup — Carrots — Prunes — Spinach — Peas Green Beans — 4½ oz. cans *Strained* Cereal — 10¼ oz. can

15¢ at Grocers and Druggists

9 Strained Foods

Gerber's For Baby

GERBER PRODUCTS CO. Fremont, Michigan.

(In Canada FINE FOODS OF CANADA, LTD., Windsor, Ont.)

Please send me free copy of booklet, "Baby's Vegetables and Cereal and Some Notes on Mealtime Psychology." (Enclose 10¢ if you would also like a picture of the original Gerber Baby drawing by Dorothy Hope Smith.)

NAME .....

ADDRESS .....

BEWARE THE APPLICATION OF FIRST AID BY AMATEURS

"Beware of 'worst' aid," comments *Transportation News*, for some persons are never happier than when they are tinkering with something. Nothing pleases them more than to find a clock, a radio or an automobile that will not go. Skill in doing any useful work is something to be proud of, but every man should realize his own limitations. The man who can fix an alarm clock had better go slowly when it comes to repairing an expensive watch.

If any one gets a cinder in his eye or a sliver in his thumb, the fellow with a natural inclination toward doctoring is quite willing to render first aid. Maybe he would have made a good surgeon with the right training, but certainly no one but a doctor should work on so delicate an organ as the eye.

A doctor needs more than a natural inclination to make good on the job. He spends several years in college and does a lot of work under the eyes of expert doctors before he is turned loose to practice on the public. One thing he has drilled into him right from the start is the importance of surgical cleanliness, not merely the soap and water kind. Even for the simplest first aid treatment the instruments and dressings have been thoroughly sterilized.

That is the difference between professional and amateur first aid. Often it means the difference between prompt healing and infection, the editorial concludes.

EDUCATION AND CRIME

"In the realization of the high importance of education as a factor in the prevention of crime, we must not lose sight of the intrinsic fact that crime is a force in itself, emanating from a combination of circumstance-deficiencies and not produced exclusively by (or to be rectified through) any one agency. Religion, education, environment, recreational supervision, proper hygiene and many other elements all have a mutual responsibility in the obviation of antisocial potentialities. A coordinated, intelligent development of each, with varying intensity and specific treatment to match the needs of the individual, during the impressionable adolescent period, will accomplish great benefits in the prevention and eradication of that cancerous growth afflicting mankind, known to us as —CRIME," comments Lewis E. Lawes, warden of Sing Sing Prison, New York, in *Montana Education*.

ECONOMY

"Save wherever possible—but do not save where you cannot.

"Money is being wasted right now trying to save where it cannot be done.

"There is no saving in closing a church. It is a great extravagance to close the schools for 'two days a week.'

"There is real economy in opening up more libraries and buying and circulating more books.

"'Burning people out' through idleness is worse than burning up buildings, because people are the real wealth, the creators of wealth. Books to keep minds and souls alive, to keep them from turning to dust, are real economy.

"But every one can't read and no one can read all the time. Man must be active or he ceases just that much to be man. That's the nature of man.

"Gardens now are for activity as well as for food. Music helps keep up the rhythm of living.

"Swimming pools, skating ponds, ball fields, indoor recreation centers, handcraft centers are not luxuries, unless it is a luxury for the human being to keep active.

"Keeping men active when there is no work is the first essential in any program of economy. . . .

"Men without activity—mines without pumps—both are equally wasteful. Even our machines we keep up against the time of using again. Activity is just as essential as food to keep men fit for the time of working again. . . .

"What of real living for ten to twelve million men and women who for a year have had no 'life' in work and must have 'life' if they have it at all, in their homes, their churches, their recreation centers? If work is withheld, withhold not music, drama, art, beauty, sport. Withhold not the chance to be active in ways that give a measure of growth, a measure of satisfaction.

"Economize, yes—but there is no economy in reducing religion, education, libraries, recreation, art, at a time when what holds men's souls together should be increased."
—Howard Braucher in *Recreation.*

"There are three wicks you know to the lamp of a man's life: brain, blood and breath. Press the brain a little, its light goes out, followed by both the others. Stop the heart a minute and out go all three of the wicks. Choke the air out of the lungs and presently the fluid ceases to supply the other centers of flame, and all is soon stagnation, cold and darkness."—*Oliver Wendell Holmes.*

Satisfying the requirements of physicians

HUNDREDS of doctors were consulted as to what they considered the most important features in a nursing bottle. And then Pyrex Nursing Bottles were made to satisfy their requirements.

Practically immune to breakage, either from intense heat or cold, these bottles insure uninterrupted feeding schedules and positive sterilization.

Six-sided on the outside . . . rounded on the inside. Two sizes . . . 8-oz., narrow neck or wide mouth, 25¢; new 4-oz., narrow neck, 15¢.

"Pyrex" is the registered trade-mark of Corning Glass Works, Corning, N. Y., and indicates their brand of resistant glass. These prices are in effect in the United States only.

PYREX NURSING BOTTLES

A sane pamphlet on sex for adolescents

Growing Up in the World Today

Approved by Clergy—Physicians—Educators
Wholesome—Frank—Dignified

20c postpaid — Massachusetts Society for Social Hygiene, 1150 Little Building, Boston, Mass.

The A.P.-UPLIFT

U. S. Pat. 1,702,922
—Invented by Mme. Poix to create the stylish upward contour; to relieve pain and remove cause of many bust troubles; also for pre-natal and nursing periods.

Sizes 30 to 44
Pink Repp.....$1.00
Pink Tussah Silk... 1.50
Pink Mesh or Jersey 2.00

If not at dealers, order direct giving exact bust measure next to skin. Booklet free on request.

G. M. POIX, Inc.
103 Madison Ave.
New York, N. Y.

KINDERGARTEN TODAY IS "WORKSHOP" FOR CHILD

A new concept has entered the kindergarten within the last ten years. The vivacious little wisp of a teacher who fascinated her little friends and caused them to worship her is quite antedated. Instead of mere enjoyment, content has come into the kindergarten curriculum, not by way of books or lectures but by the child's chosen method of learning—experience. Many fine experiences which will confront the child constantly as he grows older can be learned during the kindergarten age. The child likes to play house, to make things, to create, to do things instead of having them done for him.

"So content grows in the kindergarten through guided experiences, discussions and activities. The teacher may be just as young and pretty as ever, or she may be an older person, but the modern kindergartner is a quiet counselor and guide of her children. She plans experiences but she also allows time for her children to plan and to carry out their plans. The lovely old arts of singing, dancing and story telling this kindergarten teacher fosters too, but with the quiet note of the home rather than the platform, and her classroom is alive with those valuable realities that make up the body of the children's interests in school and out," explains May Hill Arbuthnot in *The Journal of the National Education Association.*

PATHOLOGIC FATIGUE

It is time to make a change, maintains Dr. Thurman B. Rice in the *Journal of the Outdoor Life:*

1. If you are too tired to enjoy your dinner at the end of the day;
2. If you cannot relax after leaving the job;
3. If you cannot sleep at night;
4. If you despise your work and dread to begin in the morning;
5. If you are getting cross and impatient;
6. If you are jumpy and crack up easily when the unexpected happens;
7. If you are losing weight without apparent cause;
8. If you are losing your snap and pep;
9. If you are worrying about things you cannot help;
10. If you cannot laugh.

Medford, Mass. (population, 64,300), was the largest reporting city to go through the entire year 1932 without a motor vehicle death.

PROGRESS IN EDUCATION OF FEEBLEMINDED IS DEFINITE

"Systematic education and training of the feebleminded dates from 1800, when Itard began to teach the wild boy of Aveyron. . . . In the first paragraph of his classical report, recently translated by the Humphreys, Itard says, 'Man is what he is made.' Here was faith indeed in the full power of education and environment," explains Edgar A. Doll, director of research, The Training School at Vineland, N. J.

In contrast to conditions prevailing in the early nineteenth century he points out that the feebleminded child of today is carefully studied and classified before differentiated educational treatment is applied. His individual abilities and disabilities are evaluated. Whereas formerly it was customary to drill the child in the direction of his disabilities, the tendency is now to develop his talents rather than to bolster his defects.

It is known today that mental growth and development is an orderly procedure which in the normal person has a remarkably definite sequence. It is believed that the feebleminded parallel this sequence of growth and development with remarkable fidelity, although at a slower pace. By adapting methods to the child and his needs, instead of requiring the feebleminded child to adapt himself to preconceptions, a great deal can be done in adjusting these less fortunate children to environment.

ECONOMIC DEPRESSION AND HEALTH

"The period of economic stress through which we are passing is calling for retrenchment in expenditures in almost every direction. The increase in poverty and unemployment is in the long run provocative of ill health as well as of suffering. The need for medical care as well as for public hygiene will almost certainly be somewhat augmented. Our communities must see to it that the high standards of public health already so fortunately achieved shall not be allowed to decline because of undue economies enforced on the essential health promoting agencies now supported by public funds," an editorial in a recent issue of *The Journal of the American Medical Association* advises.

A man too busy to take care of his health is like a mechanic too busy to take care of his tools.—Cicero.

Schools and Camps

Schools for Backward Children

Beverly Farm (INC.) *A Home and School for Nervous and Backward Children and Adults*

220 acre farm. 7 bldgs. New school gymnasium. 35th year. Industrial and school training given. Dept. for birth injury cases. GROVES BLAKE SMITH, M.D., Supt. **Godfrey, Ill.**

THE SYLVESTER SCHOOLS

For boys and girls whose progress has been hindered or retarded by illness, nervousness, speech defects or inability to adapt themselves to the usual form of instruction. Birchmont, new hall for girls. Illustrated catalog. 1612 Pleasant St., Des Moines, Iowa.

<> TROWBRIDGE TRAINING SCHOOL <>

Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

DO YOU KNOW

Who investigates and exposes medical frauds?

Who analyzes "patent medicines"?

Where to get child welfare information?

Do you need health material?—The American Medical Association, the national organization of the medical profession, publishes a wide variety of informative literature, to instruct and protect the public. The various books, charts, pamphlets, posters, etc., are listed in the catalog.

"HEALTH PUBLICATIONS"

of the

American Medical Association

Kinds of material listed include pamphlets on communicable diseases, cancer, sex education, public health, health conservation, animal experimentation, antisepsis; lantern slides; health posters.

This catalog free on request

Write name and address in this margin and return this advertisement

AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street CHICAGO

NEW CAMPAIGN DIRECTED AGAINST CHILD LABOR

The legislative campaign of the National Child Labor Committee for 1933 is to set 16 years as the minimum age at which children should leave school to work daily in mercantile establishments. This committee points out that children who go to work under present conditions are not only replacing adults in industry but are lowering standards and wage rates for adults, and that children who leave school and are unemployed swell the ranks of potential juvenile delinquents, whereas the school child is building for future citizenship. Not all the states include the 16 year feature in their programs for child labor legislation. North Carolina is devoting its energies to establishing a sixth grade requirement for children obtaining work permits and to strengthening the provisions for working hours and for night work. Nevertheless, comments *The American Child,* the 16 year minimum appears to be the distinguishing characteristic of this year's forward-looking legislative program.

THE INCONSISTENCIES OF PARENTS

The inconsistencies of parents are often exceedingly baffling to the child and constitute a problem for him. The mother who comforts her child one night and scolds him another because he wants company in the dark is producing a harmful effect on the child.

Every young person has a great deal to learn in adjusting himself to his environment, and each inconsistency only adds to his difficulties. Law and order should be fairly stable. Even adults are confused when differences occur. And so if you want to be a consistent parent, Alice D. Kelly suggests six points in *Child Welfare* which you should follow.

1. Don't have many rules.
2. Don't threaten a child.
3. Don't frighten a child.
4. Don't be a harsh disciplinarian.
5. Don't break promises.
6. Be trustworthy.

During 1931 there were 186,894 forest fires in the United States, which burned more than a total of 51,578,310 acres. Human carelessness was responsible for more than 90 per cent of these conflagrations.

—*The Safe Worker.*

WEIGHT IS DETERMINED BY THREE MAIN FACTORS

"Three things determine the weight of any person: how much he eats, how much he exercises and how much he inherits," comments Dr. William I. Fishbein in a recent issue of *Scholastic Coach.*

It is his opinion that every youth and child should endeavor to attain that weight which is most compatible with physical efficiency. It is safer for children to be overweight than underweight, for underweight in children may mean undernourishment.

The weight to be attained can be determined only by a careful study of each individual case.

If, by heredity, a child tends to be slender, attempts to increase the weight will only lead to digestive upsets and will not be conducive to improved physical efficiency. Attempts to decrease the weight of a child who, by heredity, tends to be fat will likewise have ill effects. If, after a careful study, it is decided that the child is overweight because he is exercising too little and eating too much, it is satisfactory to put him on a reducing program.

Children who are underweight but who are not undernourished are in no need of a gain in weight.

In concluding his article, Dr. William I. Fishbein states:

"It is important to bear in mind the distinction between underweight and undernourishment; between obesity due to overeating and that due to glandular disturbances or to overweight which is due only to body build. The short stocky individual with large muscles will weigh more in proportion to his height than the slender, long-muscled type."

PLACARD ON THE HOUSE!

The placing of a placard on a residence in which there is contagious disease is equivalent to a badge of good citizenship. When the physician tells you that your child has measles, scarlet fever, diphtheria or any disease which requires a placard on the house, do not threaten to call another doctor if he reports the case to the health officer, but ask him what you can do to prevent other children from catching the disease. Prompt reporting is the first step in preventing the spread of any communicable disease. This suggestion comes as a health message from the U. S. Public Health Service.

When YOU MEET THE SUN . . .

For sunburn, some prefer a cream—others a liquid, so in addition to Nivea Creme, we now supply Nivea Skin Oil.

Easily applied—very economical—spreads readily—no stickiness—applied before bathing it prevents sunburn but permits suntan and promotes skin comfort. Applied after exposure to wind and sun it cools, soothes, refreshes and relieves skin dryness.

Send for your trial tube of Nivea Creme or for a sample bottle of Nivea Skin Oil.

NIVEA SKIN OIL

Trade Mark Reg. U. S. Pat. Off.

P. Beiersdorf & Co., Inc., Dept. H-8
46-10 11th Street, Long Island City, N. Y.

Please send me without charge a trial tube of Nivea Creme or a trial bottle of Nivea Skin Oil. (Check which you prefer.)

☐ NIVEA CREME ☐ NIVEA SKIN OIL

Name.....

Street.....

City.....State.....

TEACHERS TAKE COURSE TO REDUCE STREET ACCIDENTS

A twenty weeks' course in accident prevention designed to acquaint teachers of New York City with the facts about the accident situation in their city and to suggest various means of teaching safety in the classroom is being fostered to reduce child accidents in that city. It combines the efforts of the school system, the police department, the homes, the parents' associations and all others interested in street safety.

The police are constantly trying to curb the dangerous practice of stealing rides or hitching; in many cases the young offenders are taken in charge by welfare officers of the precincts, who notify the parents and seek their help in discouraging this practice. Every effort is being made to interest the children in wholesome recreation activities as an antidote to the kind of play that may lead to accidents.

The accident reporting system is the basis of the prevention work. If the accident is reported, investigations can be made to see what can be done to prevent accidents of this kind in the future.

Crossing in the middle of the block and running off the sidewalk into the roadway were two other major causes of accidental child deaths in New York last year, an article in *Safety Education* points out.

PESTIFEROUS FLIES ARE MESSENGERS OF DEATH

Flies breed so rapidly that a single pair may have several million descendants. Not only are flies actual pests but they are carriers of typhoid, dysentery and other diarrheal diseases. They are messengers of death. To keep down the fly danger, follow the advice of Dr. Robert H. Riley of the department of health of the state of Maryland:

Be sure the fly has no place in which to breed. Don't allow manure to accumulate. Flies breed in manure.

Have sanitary outhouses. Flies carry filth from outhouses to food within doors.

Use a covered garbage pail and either burn or bury the garbage.

Don't let flies crawl over the baby's face, hands or nursing bottle. Be especially careful to see that baby's milk and other food are kept in a cool place free from contamination. Flies carry summer complaint to babies.

Screen the kitchen, dining rooms and sleeping rooms against flies.

FOUR COMMON FIRST AID PROCEDURES OUTLINED

It is quite possible to be overtrained in first aid rules, is the warning of Dr. C. O. Sappington, who enumerates four common emergencies which the average layman should handle only until the physician arrives.

1. Hemmorrhage: If severe, it must be stopped at once by any means.

2. Asphyxiation, either by gas or by water: Pressure resuscitation in the prone position should begin at once.

3. Poison, either internally or inhaled: The important thing is to keep the patient quiet and call a doctor. White of egg or milk may be administered or vomiting provoked, unless the poison is carbolic acid or a derivative. Carbolic acid can be detected by smell or observance of burnt areas on lips and mouth. The layman should not attempt to give a home remedy for carbolic acid poisoning.

4. Heat stroke or exhaustion: These are totally different conditions and should be treated differently. A stroke usually occurs in the open air; exhaustion takes place indoors. In case of stroke the skin is red and hot; there is a fast pulse. For this condition, ice packs may be administered. Heat exhaustion is indicated by a white clammy skin and irregular, slow, weak pulse. Keep the patient warm, lower the head and administer aromatic spirits of ammonia as an inhalant.

These suggestions are offered in a bulletin emanating from the Chicago Tuberculosis Institute.

VEGETABLE GARDENS

"Gardens, vegetable gardens, everywhere! The need has been proved by hard experience, and thousands of people are gardening this year who never did it before. Even a little backyard garden is better than none, and many a vacant lot that ran to weeds in other years is a truck patch now—for the benefit of owner, tenant, and especially for relief of the unemployed. Here is the summer vegetable supply for many a family that could not afford to buy the same foods the garden yields—a most essential part of the family food requirements, too, because of the special food value of vegetables," according to the bureau of home economics of the U. S. Department of Agriculture.

And he that will this health deny,
down among the dead men let him lie.—*Dyer.*

SEX EDUCATION

New Booklets by THURMAN B. RICE, M.D.

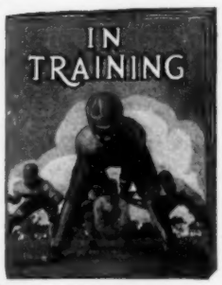
Modern without sacrificing fundamentals.
Frank, but not sensational. Illustrated.

For Boys and Girls of Ten

How life comes from life—How flowers are born—Male and female functions in fish, frogs, turtles, birds, calves, colts, kittens and human beings—Simple facts about sex hygeine. **36 pages**

For Boys of High School Age

How Sex influences every minute of life—Clean sports—The fun of hobbies—The miracle of Life—Human mating—Purposes, physiology and hygeine of sex—How marriage protects the race. **48 pages**



For Girls of High School Age

Motherhood, the great career—How reproductive organs function—Menstruation, its physiology and hygiene—Athletics for girls—True feminine attractiveness—Going out with boys—Marriage. **38 pages**

For Both Sexes of College Age

Training for happy home life—Sex feeling of male versus female—Control: a mutual responsibility—Premarital understandings—Planning for parenthood—Ideal honeymoon—Two purposes of sex. **44 pages**

For Persons of College Age or Older

Prevalence of venereal diseases—Effects on individual and on society—Syphilis and its transmission—Protective measures—Symptoms and stages—Gonorrhea and other diseases. **40 pages**

Heavy paper covers *25 cents per copy*
Complete set of five in special filing case, $1.00

AMERICAN MEDICAL ASSOCIATION
537 North Dearborn Street :: Chicago

GREAT LOSSES INCURRED THROUGH MENTAL ILLNESS

The economic burden of mental disease in the state of New York alone amounted to more than 129 million dollars in 1931. Even so, such a loss is small compared to the loss of mentality, the loss of personality and the loss even of life borne by the thousands of sufferers, a bulletin from the New York State department of health declares.

There are two principal classes of mental diseases; namely, organic and functional. Although no strict line of demarcation can be drawn between the two classes, the term organic is used to designate those mental diseases which are associated with disorders or toxic states of the central nervous system or other organs of the body. Senile mental disease, for example, is associated with changes in the cells and blood vessels of the brain.

Functional mental diseases, so far as known, are not associated with characteristic lesions of brain cells or with toxic conditions. They may be due to a defective constitution or to faulty habits or to environmental stresses.

At present, the most hopeful line of attack is against the organic mental diseases whose causes are well known; namely, those caused by syphilis, alcohol and drugs.

Early treatment of incipient cases of functional mental disease and the adoption by the people generally of the principles of mental hygiene that have been discovered in recent years will be effective in reducing the number of functional mental cases.

BEWARE "FRESH FROM THE FARM" EGG VENDORS

A warning to housewives emanates from the department of health of New York City. Dr. Shirley W. Wynne, health commissioner, tells housewives to beware of the "fresh from the farm" egg vendors who are said to be on the increase in many districts. Unless the pedler can show a permit from the department of health, and these are issued free of cost to legitimate egg and butter dealers, the commissioner advises housewives to refrain from buying eggs or butter from pedlers.

"Spots" and "blood-ringed" eggs have been sold as fresh goods, contrary to the provisions of the Sanitary Code. Reliable egg dealers will not do this because it is forbidden by the department of health. In addition they know that the spurious goods would be returned by the customer.

NEW METHODS OF TEETH CARE CONTRASTING TO OLD

The old method used to be to wait until the tooth ached before going to a dentist. In contrast to this method is the new way of caring for the teeth, which is described in a report from the Iowa state department of health, as follows:

"Now, all this has been changed, and perhaps no one should be held to account for past errors. New and improved methods but indicate the onward march of progress. The six year molars are now recognized by all and receive early and repeated attention. The sudden onset of pain is no longer the 'cue' to go to the dentist. Periodic inspection of school children by nurses and examination by dentists and physicians have become indispensable. The discovery of 'pits and fissures,' which are the early beginnings of decay, makes possible small fillings and the exercise of economy. Pain, which means that decay has gone deep to the nerve itself, has become a thing of the past, and a trip to the dentist is no longer dreaded. Crooked teeth are now straightened and made attractive by remarkably improved devices. Wholesome diet, consisting largely of our most common foods, is now known to be a chief factor in the prevention of tooth decay."

WATER SOFTENER SAMPLE EATEN BY CHILD

Recently samples of a water softener, colored blue, were distributed from house to house in a residential section of a city in the central part of New York State. A baby, 19 months old, playing on the porch of a house, found one of the samples and, childlike, swallowed the material. He became nauseated; a physician was called, and in a few hours the child was well again. House-to-house distributors should be instructed that samples of a chemical nature should be passed personally to adults and not thrown carelessly on porches or doorsteps. Some cities have ordinances to this effect, but frequently the local laws are not observed. It should not require a fatality to secure the enactment and enforcement of such ordinances, comments the New York state department of health.

It is wrong to assume that a child's failure to learn is due to sheer stupidity until every possibility of increasing the incentive has been exhausted.

—Child Development.

Now a 100% Whole Wheat Bread

If you want to enjoy the wholesome benefits of all the good there is in wheat, try the new Silvercup 100% Whole Wheat Bread. It contains all the wheat bran and all the wheat minerals, enriched by whole milk and sweetened with honey. It is pure, wholesome and delicious. It stands accepted by the Committee on Foods of the American Medical Association. Buy this bread and you are sure of a 100% whole wheat loaf.

SILVERCUP 100% WHOLE WHEAT BREAD —*Sliced*

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Look for this name and this seal.

Gordon Baking Company

Why Many Physicians Prescribe Lucky Gluten Flour

1—Because it gives the loaf a better flavor—hence, patients find it less objectionable.
2—Because it is guaranteed to meet U. S. Government standards for a gluten flour.
3—Because it stands approved by the American Medical Association—Committee on Foods.

Send $1.00 for 5 lb. trial package.

FEDERAL MILL, INC. ■ LOCKPORT, N. Y.
Mfrs. of High Quality Flours for more than 25 years.

YOUR SKIN IS **SAFE** *with* Elmo **BEAUTY PREPARATIONS**

Repeated chemical analyses of Elmo toiletries show the absence of any ingredient that could possibly harm the normal skin. They not only are safe but they preserve and enhance the beauty of the skin. Here are Elmo beauty preparations for every need:

ELMO

RA-LO LOTION	CLEANSING CREAM
TISSUE CREAM	CUCUMBER CREAM
MELTING CREAM	TONIC ASTRINGENT
SKIN FRESHENER	RA-LO FACE POWDER

Insist upon Elmo preparations. They are as pure as it is humanly possible to make them—lotions, creams, astringents, powder. Try Elmo toiletries!

At Drug Stores and Department Stores

ELMO, Incorporated
21st Street and Hunting Park Avenue
Philadelphia - - Pennsylvania

SENSE OF INSECURITY CREATES MENTAL ILLNESS

"A new peak in numbers has been reached in the type of mental illness resulting from a real or exaggerated sense of insecurity," according to a report emanating from the United Hospital Fund of New York.

Discussing this new phase of mental ailment, Dr. George K. Pratt said:

"The noticeable increase in patients is not of those having serious mental disorders, but of the shattered morale type. In some of these cases the individual has lost all hope, is apathetic and listless with mental depression. Often this depression is so pronounced that it is observable in his appearance and general physical condition. . . .

"Along with the organized work of relieving hunger, cold and sickness in these times of unemployment, there must not be forgotten the equally vital need for relieving emotional strains and for raising the morale of those who are made insecure."

Many of these persons can often be rehabilitated and, eventually, when employment is found for them, become able to resume their former positions in the community.

KEEP CANDY LAXATIVES AWAY FROM CHILD'S REACH

Various kinds of sugar-coated or chocolate-coated laxatives, put up in such a way as to resemble chewing gum or candy, are on the market today, and careless use of some of them is injurious to children and adults, in the opinion of Dr. F. J. Cullen of the Federal Food and Drug Administration. These laxatives come in various forms, such as pressed fruits, mints, small cubes or lozenges. Sometimes they are brightly colored and are packaged attractively.

Practically all of them contain phenolphthalein, a drug known to injure the tissues of the liver. An overdose of these tablets, especially by children, may be injurious to health.

Coated laxatives are nearly always correctly labeled, but the likelihood of a child reading the label is small. Even some adults do not take the precaution to scrutinize statements made on labels. Dr. Cullen strongly urges parents to keep cathartics and all other medicines out of the hands of children.

Cleanliness of body was ever esteemed to proceed from a due reverence to God.—Bacon.

HISTORY OF SWIMMING POOLS SHOWS NEED OF SANITATION

Twenty-two hundred years ago, Appius Claudius became censor of the Roman Republic. To increase the opportunities for healthful public bathing and swimming, he built an aqueduct from the springs at Praeneste, a score of miles away, to the new public bath and swimming pool outside the walls of Rome. He built also a boiling plant to soften the hard spring water for cleansing purposes. The experiment proved such a success that more and more pools and aqueducts were built until the daily consumption of water for bathing and swimming is said to have reached nearly 200 million gallons. For a period of 700 years the Romans operated public baths and swimming pools.

Their success was due first to the design of the pool, the circulation of the water, its great quantity and its coolness, and second to the strict enforcement of the laws for the operation of the baths and pools.

In 453 the Huns, with whom the Romans were at war, cut the aqueducts that supplied the water, and fifty years later many of the great bathing and swimming pools were in ruins. During the Middle Ages, bathing and swimming were cultivated little, the pools degenerated and became places of infection, epidemics broke out, and finally all the pools were closed.

Interest in swimming pools was again aroused in the nineteenth century. At the present time, in modified form, some of the best designed modern pools use the Roman method of circulating the water, thus removing much of the polluted material from the pool shortly after it has been deposited by the bather. The value of liquid chlorine as a sterilizer for swimming pool water has become generally recognized. It requires considerable mixing with the water in all parts of the pool, and this mixing is provided by the underfloor method of circulation. Thus chlorine treatment is an added safeguard.

If you would cultivate the intelligence of your pupil, cultivate the power that it is to govern. Give his body continual exercise; make him robust and sound in order to make him wise and reasonable; let him work and move about, and run, and shout, and be continually in motion; let him be a man in vigor, and he will soon be such by force of reason.—*J. J. Rousseau.*

Health pamphlets

Child Welfare Supplies

—A Child Is to Be Born.....15c
—Your Baby—How He May Be Kept Well 10c
—Baby Health Conference.....10c
—Standard Score Card..... 5c
—Record Sheet..... 5c
—Anthropometric Table..... 5c
—Mother's Milk.....15c
—What Baby Puts in His Mouth.....10c
—Training the Child to Obey.....15c
—Entertaining Convalescent Child.....10c

Health Plays

—Good Health Elves.....15c
—Trial of Jimmy Germ.....10c
—Friendly Brushes.....10c
—Magic Fluid (Diphtheria Antitoxin)..10c
—Treasure of Healthy Harbor.....10c
—On Board the S. S. Health.....10c
—Jolly Smiles Crew.....10c
—Syncopated Health Trial.....10c
—The Animals Protest.....10c
—Trial of Johnny Jones.....10c
—School Lunch Room.....10c

Sex Education Pamphlets

—The Story of Life (for boys and girls of 10) 25c
—In Training (for boys of high school age) 25c
—How Life Goes On and On (for girls of high school age).....25c
—The Age of Romance (for both sexes of college age).....25c
—The Venereal Diseases (for persons of college age or older).....25c
—Complete set of 5 in filing case...$1.00

Nutrition and Diet

—The Food We Eat.....10c
—Obesity 20c
—How to Gain Weight..... 5c
—Reducing Diets 10c
—A Square Meal..... 5c
—Camp Cookery..... 5c

Sanitation and Hygiene

—Cultivating Health on Farm..... 5c
—Are You in Business for Health?...10c
—Why Register Births and Deaths?...10c
—The Community Swimming Pool..... 5c
—Pure Water.....10c

Communicable Diseases

—Diphtheria 15c
—Smallpox 15c
—Menace of the Unvaccinated..... 7c
—Typhoid Fever..... 10c
—Scarlet Fever—Measles..... 15c
—What You Should Know About Tuberculosis 25c
—Modern Treatment of Tuberculosis.. 5c

Health Problems in Education

—Health Essentials for Rural School Children 15c
—Health Improvement in Rural Schools 25c
—Health Service in City Schools.....25c
—Daylight in the Schoolroom..... 5c
—Health Education Program (1930)..$1.75
—Conserving Sight of School Children.35c
—Ventilation of School Bldgs.....15c

Physical Training

—Rules of the Game.....10c
—Ten Commandments of Good Posture. 5c
—Exercises for Business Women.....10c
—Proper Development of the Body...10c

PRICES INCLUDE POSTAGE

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn Street
CHICAGO, ILLINOIS

Check Pamphlets Desired, Sign Name and Return with Remittance

Name.....

Address.....

BOY-GIRL EXPERIENCES CAN BE GUIDED BY COACH

The boy-girl experiences common to high school age can be guided best, perhaps, by the school coach, for many parents do not know the associates of their children. Many coaches are alert to such opportunities.

The largest group of these experiences cluster about comradeships, maintains Newell W. Edson writing in *Scholastic Coach.* Here are worked out the elements of social adjustments of the sexes—cooperative effort, sharing, give and take, respect for personality, unwillingness to exploit, stimulation to be one's best. Much of marriage is everyday comradeship, often successful or unsuccessful because of experiences in youth. And boy-girl comradeships hold endless possibilities for high or low satisfaction and ideals.

The starvation of affections is another problem of youth. On this subject Newell Edson explains the value of teaching boys and girls some knowledge of the emotional elements and drives that enter into the problem, and explaining the borderlines of self control. His attitudes and simple statements about the relation between affection and love and about their high values in happiness will orient boys and girls who waver under the lure of sexual adventure. Occasionally he can and should head off a love affair, especially when he sees that it will result in cheapened personalities and unhappiness.

Probably the commonest problem that the coach can help to solve is sexual vulgarity, expressed in crude talk and writing, smutty stories and double meanings. Here the coach can set a good example by his own conduct and speech. The boy-girl tease, masturbation, and crushes on members of the same sex are individual problems which the coach can and should meet. The services of a psychiatrist as well as of the parents may at times be needed.

A well-developed and active muscular system tends to maintain a certain tone of the nervous system that favours an alert and confident habit of mind. Perfect functioning of all the bodily organs not only favours in this way mental activity in general, but tends to an objective habit of mind; whereas imperfection of organic functions tends to produce an undue prominence in consciousness of the bodily self and, therefore, an introspective and brooding habit of mind.

—*William McDougall.*